# The Lumleian Lectures

ON

# THE COMPREHENSIVE STUDY OF THORACIC PHTHISIS.

*Delivered before the Royal College of Physicians of London on March 18th, 18th, and 20th, 1902,*

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## LECTURE I.

*Delivered on March 18th*

MR. PRESIDENT AND GENTLEMEN,—The group of cases which are so sadly familiar under the terms "phthisis" and "consumption" have, for obvious reasons, always exerted a powerful attraction, not only for members of the medical faculty, but also for the laity. While they have contributed enormously to the human death-rate, and caused widespread and profound misery and distress amongst all classes of the community, high and low, rich and poor, they have been further surrounded with a halo of mystery in the past, which has attached to them a peculiar sentimental interest and dread. Moreover, these cases have compelled the attention of many earnest investigators and seekers after truth; and one supreme object has been to endeavour to discover a "cure" for this strange and terrible disease. Need it be wondered at that, from the very nature of the conditions, quacks of various kinds have found "consumption" a "happy hunting ground," and a source of considerable financial prosperity, each, of course, claiming to have discovered the long-looked-for "cure." This gold-mine shows no signs of being "worked out," even in this enlightened age.

The scientific discoveries and practical advances in our knowledge in relation to tuberculosis and phthisis, which have been such a remarkable outcome of modern researches, have cleared away all mystery and sentiment, and things have now assumed a very commonplace aspect. Nevertheless the subject has excited an ever-increasing, deeper, and more widespread interest, mainly on account of the ardent hopes which have been roused with regard to the effective treatment, prevention, and ultimate eradication of a malady which has hitherto been looked upon as a "hopeless scourge." In fact, "consumption" may now be described as being "in the air," I mean figuratively, as well as infectively. In this country an "Association for the Prevention of Consumption and Other Forms of Tuberculosis" was established in 1898 and this was followed by the British Congress on Tuberculosis which took place in London last July. This Congress was highly successful from a scientific, oratorical, social, and let us hope a practical point of view. It was characterised by at least one dramatic incident, and by the enunciation of some strong statements of opinion which have since excited considerable discussion and opposition. At its closing general meeting the members of the congress carried certain resolutions, well-meaning enough, but whether likely to lead to practical results commensurate with the occasion remains to be seen. I note that, although the point was referred to by some speakers, the congress did not dare to incorporate in these resolutions any advice to ladies not to sweep up the filth of the streets and pavements, with the disease-germs therein contained, by means of their trailing dresses.

Those who have followed the course of events during the last few months must have realised the fact that the Congress has not been an unmixed benefit. Of course, on the one hand, it has been the starting-point of markedly increased activity and development in relation to the agencies and methods for the prevention and cure of consumption which have taken such a firm hold upon the imagination of the community at large, and which have appealed so strongly to the practical sympathy and benevolence of many who have the means to help. Moreover, it has led to the discussion in the medical press of important questions which there is every reason to hope may lead to useful results. So far good. But, on the other hand, much of the correspondence, more particularly in the lay press, cannot fail to have led to serious mischief. Indeed, in a certain influential daily newspaper the heading "Congress on Tuberculosis" has been ever since until quite recently the introduction to very disagreeable and aggravating reading, the far-reaching injurious effects of which upon a credulous and easily-gulled public it is impossible to estimate. We can afford as a profession to ignore the insults which have been heaped upon us in this correspondence, and surely we ought to treat with the utmost ridicule and contempt the insolent and impudent suggestions made with regard to "testing" and "scientifically investigating" any supposed "cure for consumption" that is not perfectly open and above-board. Still, for the sake of humanity we cannot be altogether silent, and personally I feel bound to take this opportunity of protesting strongly against any member of our profession countenancing in the slightest degree such a proposal. Of course, we cannot prevent any fussy and officious busybodies or so-called philanthropists from thrusting themselves to the front, giving dogmatic opinions about subjects of which they are absolutely ignorant and supporting any pretentious treatment they choose; but our plain duty is to leave them severely alone.

Personally I did not take any active part in the Congress on Tuberculosis, as on these occasions I prefer to be a humble disciple. This gathering is, however, somewhat directly responsible for the subject which I have selected for these lectures, for reasons with which I will not trouble you, but which may possibly be revealed in the course of my remarks. I trust that my long connexion with the Brompton Hospital for Consumption gives me a certain claim to be heard with respect to thoracic phthisis, at any rate in its more practical and clinical aspects. I do not for a moment pretend to bring before you anything original, novel, or startling, and can only hope to present facts or to offer suggestions in such a way as to be of some service to the profession in dealing with this still terrible scourge. I fear that I did not realise at starting what an extensive and difficult task I had set myself within the limited time at my disposal, and in the actual delivery of these lectures, at any rate, I must omit the discussion of many points in detail; while, with regard to others, I can confidently rely on the general information and knowledge of my audience. You may be glad to know that I have no intention of boring you with dull statistics or with lengthy descriptions of cases. Nor do I propose to quote many authorities, though from no want of respect for their labours or teaching.

Before proceeding to the actual discussion of my subject I feel bound to offer a mild protest against the modern tendency to regard all questions relating to phthisis too exclusively from the scientific side, and to accept no doctrine or opinion as reliable or authoritative unless it emanates from the pathological or bacteriological laboratory. While expressing my profound admiration for, and appreciation of, the valuable work which has been, and is still being, done in these laboratories in relation to tuberculosis, I submit that this does not cover the whole field, and that phthisis, as it comes before us in actual life, must be dealt with and studied on a much broader basis and from other standpoints. My friend and colleague, Dr. G. Vivian Poore, in a recent interesting address on "Milk and its Relation to Health and Disease," holds that the question of the relationship between bovine and human tuberculosis cannot be settled by laboratory experiments only, and that we must not set aside its practical, clinical, and epidemiological aspects. This statement of opinion, with which I cordially agree, applies with equal force to many other questions bearing upon tuberculosis and phthisis.

The title which I have given to these lectures indicates the intention and scope of my subject. I have employed the expression "thoracic phthisis" advisedly, to emphasise what are, in my opinion, two most important practical facts—namely, first, that in the cases of chest disease usually and conveniently grouped as "consumption," the morbid changes are by no means limited to the lungs, but in the large majority of instances other thoracic structures are more or less affected as well, and the mischief may even originate in certain of these structures; and secondly, that, even assuming the disease to be essentially a manifestation of tuberculosis, other lesions and pathological changes may be associated with the tuberculous mischief from the first

or from an early period; while they are certain to develop or supervene in various combinations and degrees during the progress of cases which are at all prolonged, and especially in those of a markedly chronic type. Ultimately the conditions not uncommonly become extremely complicated. In other words, "thoracic phthisis" and "pulmonary tuberculosis or consumption" are by no means synonymous terms, a fact which is but too often entirely ignored or forgotten. Recognising these fundamental facts, it is obviously most desirable that thoracic phthisis should be studied, both scientifically and practically, on a comprehensive basis, on certain lines which it will be my business to endeavour to elucidate in these lectures. Having thus adequately mastered the subject in the abstract, and gained a fairly intelligent and definite knowledge of facts, and not of mere theories, assumptions, or doctrines, and having acquired adequate skill in clinical investigation, the trained practitioner must then regard it as his imperative and unfailing duty to deal with every individual case which comes under his care from this comprehensive standpoint, to study it systematically and thoughtfully, so as to be in a position to give rational and reliable advice, to do the best that is possible for this unfortunate class of patients, and to take suitable and adequate measures of a prophylactic or preventive nature, so far as circumstances permit.

The several points which it is my purpose to discuss in these lectures in relation to the comprehensive study of thoracic phthisis come conveniently and naturally under the following familiar general headings: I.—Pathology and Etiology; II.—Morbid Anatomy or Pathological Changes; and III.—Clinical History and Investigation. An intelligent and practical knowledge and appreciation of the facts which we learn from these aspects is absolutely essential as a rational basis for IV.—Treatment and Prevention. A friend said to me when he heard of my choice of a subject for these lectures, "Now be sure to tell us all about the treatment of consumption." Well, Sir, I am sorry to disappoint him, for I do not propose to deal with this branch at all, except, it may be, to make an incidental allusion to particular points, and for the following reasons. In the first place, it hardly comes within the scope of my subject as defined by the title which I have adopted. Secondly, the other divisions include much more than I can possibly discuss satisfactorily within the time at my disposal, and it would be quite absurd and hopeless to attempt to deal with the treatment and prevention of consumption at the fag end in any way commensurate with its immense importance. Thirdly, there is so much written on the subject at the present time, so many "cures" advocated, and such an amount of discussion on various matters of detail, that I feel sure that you must be all pretty well bewildered; if I ventured to say anything I should probably only add to the general confusion and chaos. Personally I really feel so dazed with what I have read and with the statements made that I have almost come to the conclusion that neither I nor anyone else knows much about the matter. And having no "cure," or even "cut-and-dried method of treatment" for thoracic phthisis, I have no special reason for inflicting my views and opinions upon you.

## I.—PATHOLOGY AND ETIOLOGY.

I presume that few, if any, would question for a moment at the present day the essential relationship between tubercle and thoracic phthisis, or would deny that this morbid product takes a most prominent and active part in the pathological manifestations of the disease. Moreover, its direct connexion with the *tubercle bacillus* and its consequent infective nature are almost universally recognised and acknowledged, though there are some who are still unconvinced. I read the other day a review of a work dealing with pulmonary consumption in which it is maintained that the disease is not contagious, and that in the large majority of cases it is primarily a neurosis, the pulmonary disintegration being secondary. As a protest against such absurd and mischievous teaching I take the earliest opportunity of emphasising the importance of always bearing in mind infection as a common and dangerous factor in the causation of thoracic phthisis. And in this connexion it would ill become me if I did not pause, to pay my tribute of profound respect and admiration to that greatest of bacteriologists—Koch, whose scientific investigations, culminating in the discovery of the tubercle bacillus, and the complete demonstration of its relation to tuberculous lesions, has been well described as "a classical masterpiece of bacteriological research."

But while fully appreciating and endorsing the infective aspect of the pathology and etiology of thoracic phthisis, on the other hand, it cannot be too strongly enforced at the present day that this does not cover the entire ground. Public attention is now so concentrated upon the "contagiousness of consumption," and the idea of infection is so absorbing and so overshadows all else, that other practical factors in originating or developing the complaint are either entirely lost sight of, or at any rate are not insisted upon or brought into such prominence as they ought to be. Moreover, statements are made bearing upon its causation which in my opinion are not in accordance with fact, and to some of these I shall have to refer in the course of my remarks.

I do not propose to trouble you with any discussion of the different points bearing upon the bacteriology of thoracic phthisis, which at present seems to be in a somewhat unsettled state, including the question of so-called "pseudo-tuberculosis." I will merely draw attention to the fact that there are other well-known pathogenic organisms besides the tubercle bacillus which are as a rule concerned, more or less, in what I may call the phthisical process, regarding it comprehensively, especially the pneumococcus and the pyogenic microbes with which you are all familiar, and which I need not enumerate. In short, "mixed or combined," as well as "secondary" infections are undoubtedly common, and are especially prominent in many of the more acute cases. Experimental investigations have shown that pyogenic organisms have in all probability an important effect in hastening necrosis and softening of tuberculous consolidation, while later their influence becomes obvious enough in connexion with phthisical lesions. The organisms which occasionally are found in the walls of cavities, including amongst them certain moulds and fungi, may be of some importance as destructive agents, but nothing definite can be stated on this point, so far as I am aware.

I now desire to offer a few remarks on the question of the contagiousness or infectivity of thoracic phthisis, as it comes before us in actual practice. I presume that there are but few, if any, members of the medical profession who regard consumption as contagious in the ordinary and popular acceptance of the term, that is, as being conveyed from one individual to another in the same way as measles or smallpox. But undoubtedly this is the idea which is very prevalent amongst the laity, and I have met with not a few instances in which it has proved a serious inconvenience, difficulty, or hardship. The fact cannot be ignored that the modern prominence given to the contagiousness of consumption has created quite a scare amongst large numbers of people which materially interferes with commercial, professional, social, and practical life. I believe that certain places which actually owe their prosperity to the fact that they claimed special advantages as health-resorts for consumptive patients, now repudiate the attachment altogether and do their utmost to boycott such patients, and to prevent them from coming there, as it is found that they keep other people away whose patronage is now far more lucrative. Some places absolutely refuse all consumptives; and things have gone so far in the United States that the Government has recently issued an order excluding all tuberculous immigrants from that country, which has elicited an emphatic protest from the New York Academy of Medicine. It is our business as a profession at once to endeavour to allay this excessive and unreasoning alarm, and to make the laity understand that, with very simple precautions, there need be little or no fear of infection in this way. The actual experience in health-resorts for consumptives in the higher altitudes does not favour the idea of infection when due care is taken. Nor do I think that we are called upon to warn people, as has been lately suggested, against going themselves or taking their children to the Zoological Gardens lest they should "catch consumption" from our kinsfolk—the monkeys.

But unfortunately there is another side to the case. I suppose we are all pretty well agreed that the main source of infection is the dried sputum, which contains the tubercle bacilli in countless millions, and these are deposited and carried about attached to fine particles of dust, being thus always liable to be inhaled from the atmosphere. There is another view—that infection is chiefly conveyed by the free, finely divided particles of sputum ejected in the act of coughing, which are suspended in the atmosphere and then inhaled. This mode of conveyance ought certainly not to be ignored. It is usually dogmatically stated that the breath of a consumptive patient is not infectious, as tubercle

bacilli cannot be detected in the expired air, but personally I do not feel altogether satisfied on this point; at any rate, it is well to err on the safe side. One most disagreeable, not to say disgusting, possible mode of infection by tubercle bacilli has been suggested—namely, the imperfect washing of glasses in public-houses and restaurants into which consumptive patients have coughed, the expectoration being thus left in the glass or clinging to its edge.

It would be an impertinence on my part if I were even to mention the measures which must be familiar to all, and which are now carried out on such an extensive scale, for dealing with the expectoration of phthisical patients on preventive lines. But there comes the serious question—How far are they successful? In institutions and amongst communities where they can be effectually practised of course incalculable good is being done in this direction, and it would to-day be a disgrace to any fairly educated and respectable individual, or to a household where phthisis existed, if the instructions at command for dealing with the sputum were not thoroughly attended to. But unfortunately there are many obvious reasons which must render our utmost efforts for exterminating the tubercle bacillus only partially successful. At present things are certainly anything but satisfactory. In our open streets, even in those inhabited by the "upper classes," as well as by "fashionable physicians" and "specialists on consumption," to say nothing of the main highways of commerce or of side streets or "slums," one may still see at any time on the pavement or the roadway enough phthisical sputum to infect a whole district or city, having regard to the enormous number of organisms which it contains, and their distribution is abundantly promoted and aided by the ordinary methods of sweeping pavements and streets, the hoisting of all kinds of filth and débris into dust-carts, and various other performances, not forgetting the "trailing dresses," by which the air we breathe is polluted and poisoned. What the state of things is in the large majority of houses or rooms where phthisis exists it is not pleasant to contemplate; while often no effort whatever is made subsequently to get rid of the infectious elements, to disinfect rooms, or to deal with contaminated fomites. Then bacilli are also thrown at you in countless abundance by the shaking of mats and carpets in your very face. And, notwithstanding polite requests, stringent regulations, by-laws, and penalties, the filthy habit of spitting is still quite common in places of general resort and in public vehicles. Things are little or no better in the smaller towns and villages or hamlets.

There are two other points which more immediately concern the medical profession and the nursing department to which I must allude in this connexion. I have a strong impression that much phthisical sputum, even in hospitals, is often only very imperfectly disinfected, and is then disposed of in a casual manner down a water-closet or in some other way. What happens afterwards depends upon circumstances, but it is not unreasonable to suppose that infection may thus be carried far and wide. Another point of importance is that other discharges besides expectoration, coming from tuberculous lesions, as well as tainted urine or fæces, contain tubercle bacilli, it may be in large numbers, and if neglected, as they often are, may become a prolific source of infection.

Now, the picture which I have drawn of the existing state of things, though there is, I hope, the promise of progressive improvement as education advances, is rather alarming, and seems to indicate considerable risk of infection in various directions to all members of the community who are obliged to go out into the world, and to take part in its active life or work, while thousands upon thousands, from the unavoidable conditions of their normal existence, are necessarily and inevitably exposed more or less constantly to the possible injurious effects of tubercle bacilli in a pronounced and concentrated form. And the danger is increased from the fact that these organisms possess such a remarkable tenacity of life and resisting powers, so that they can live for a long time after their discharge in all kinds of places, and may thus set up disease at a remote period. The only natural agent that seems to destroy them speedily and efficiently is the powerful light of the sun, but, unfortunately, that does not help us much in this country as a rule. Undoubtedly, too, tubercle bacilli retain their virulence for an indefinite period in connexion with stained handkerchiefs, bed-clothes, under-garments or other articles of clothing, and various other materials which may act as fomites. In one part of the correspondence in the lay press elicited by the British Congress on Tuberculosis, to which I have before referred, an attempt was made to fix grave suspicion as a possible source of phthisical infection upon a material much used for the external protection and decoration of humanity named "Harris tweed." I know nothing about the matter personally, but I believe that the defenders of the "tweed" came off victorious, so that any of us who have been accustomed to wear it under any circumstances may "breathe again." The stuffing of dolls was also vigorously attacked from this point of view, but I think this is rather a "straining at gnats." I have not dealt with the question of tuberculous infection by milk or other kinds of food, as it does not apply directly to thoracic phthisis, and is still unsettled and *sub judice*.

While thus placing the contagious aspect of thoracic phthisis in the forefront, things are not nearly so formidable from this point of view as they appear to be at first sight, and it cannot be too strongly insisted upon that it depends in very large measure upon individuals and communities how far the disease shall prevail, and what ravages it shall make. The fact must never be ignored or made light of that there are numerous causes and conditions, call them "predisposing," "favouring infection," or what you will, which hold an important, it may be an essential, relation to the complaint, as etiological factors under various circumstances, and many of which are to a great extent under our control.

I now submit in tabular form a comprehensive arrangement or classification of cases of thoracic phthisis, from a pathological and etiological point of view, which may afford a convenient basis for further discussion.

TABLE I.—*Etiological Classification of Thoracic Phthisis.*

A.—Definite infection from without.
B.—Infection from within—Auto-infection.
C.—Personal inherent predisposition.
D.—Causes acting on general system—Acquired personal predisposition.
E.—External conditions and environment.
F.—Special causes.
G.—Local causes, acting more or less directly on respiratory apparatus.
H.—Local predisposing morbid conditions.
I.—General or remote predisposing diseases.

I propose to discuss briefly each of the etiological groups mentioned in the foregoing table.

### *A.—Definite Infection from Without.*

The cases which I would place in this group are those in which thoracic phthisis can be distinctly traced to some definite source of infection, there being no personal predisposition or other cause at all noteworthy or evident, and the patient having been previously in sound health. Of those directly infective cases I have met with some striking instances, and they belong to one or other of the following categories.

1. Those originated in the post-mortem room or in the pathological or bacteriological laboratory. Apart from accidental inoculation, I believe that phthisis may possibly arise from inhalation of tubercle bacilli in the course of experimental investigations or researches, and I feel sure that it is well to exercise due care when carrying out such investigations in connexion with tuberculous lesions or their organisms.

2. Those in which the infective agent passes directly from individual to individual. Some authorities would place a large proportion of cases in this division, especially as they occur in conjugal and family life. Of course, under such circumstances there would always appear, *à priori*, to be more or less danger of this mode of transmission, but there are generally other factors to be taken into account. My own opinion is that an exaggerated idea of this uncomplicated direct infection is often entertained, and this opinion is supported by the oft-quoted experience of the Brompton Hospital, in relation to the medical staff, residents, and nurses. Still, I have met with some very remarkable instances in which it has taken place. It can then be as a rule readily explained by prolonged, intimate, and more or less constant companionship in a small and close room; personal devotion in nursing; and, not uncommonly, frequent kissing. Thus phthisis may be conveyed, not only from one member of the family to another, but from a patient to an individual in no way related. Of this I had a striking example in the case of a young man who was engaged to be married, but his intended bride developed consumption. He was in her company a great deal during her illness, and was a "devoted lover" until her death. Soon after he was brought to me suffering from rapid and extensive pulmonary tuberculosis.

3. Those in which tubercle bacilli are inhaled in a room, office, workshop, or other place where due care has not been taken with regard to phthisical expectoration, or where proper disinfection after occupation by phthisical patients has not been carried out. How far thoracic phthisis may arise independently and directly in this way must be a matter of speculation, but certainly this mode of infection ought never to be made light of or disregarded. As an illustrative case I may mention that of a young man who was brought to me suffering from pronounced consumption which was attributed to the fact that he had worked at a desk where a clerk had previously worked who died from rapid phthisis. He came from a sound stock, had enjoyed excellent health, had led an active and vigorous life, was quite satisfactory as regards habits in every way, and there appeared no reason whatever why he should have become phthisical, except from this direct infection.

I have seen it stated that no arrangements are made in post-offices in this country as regards expectoration, while in addition their want of ventilation and other sanitary defects are but too evident. Consequently phthisis from direct infection is highly probable under such circumstances, and the mortality from this disease amongst the employés in these offices is stated to be decidedly high, to say nothing of dangers to the public.

### *B.—Infection from Within—Auto-Infection.*

That thoracic phthisis may be secondary to a tuberculous lesion in some other part of the body is well known and acknowledged in a general kind of way, but my belief is that the actual facts bearing upon auto-infection are by no means adequately recognised or appreciated. It has appeared to me that in some instances of this kind tubercle bacilli are not the only infective agents, but that pyogenic organisms have also to be taken into account. This auto-infection may apparently be quite independent or accidental; but in other cases it is started or brought out by some more or less definite cause, it may be very slight or quite trivial, or by operative procedures for the cure or removal of tuberculous lesions or their effects. And here it may be noted that the question of infection by food may, from this aspect, have a practical though indirect bearing upon the development of thoracic phthisis, inasmuch as the primary mischief may have thus been originated. Direct local infection through the genital system has also to be borne in mind. In other cases such mischief may not have been primarily tuberculous, but has been the result of injury or of inflammatory changes of low or suppurative type, the tuberculous infection being secondary.

Coming to the sources of auto-infection in the causation of thoracic phthisis, I should very much have liked if I could have discussed at some length this aspect of my subject. On the present occasion, however, I can only enumerate the primary lesions which I have found to be practically worthy of consideration, excluding the possible manifestation of active thoracic tuberculosis as a development under favourable conditions of latent congenital infection by tubercle bacilli, through the medium of the blood-current or in other ways, which in my opinion is highly probable within certain limits. These lesions are:—1. Affections of the absorbent glands in the vicinity of the chest, especially in the neck and axilla, the thoracic disease being due either to direct extension or to infection through the lymphatic vessels. 2. Diseases of bones or joints, often of traumatic origin, and the suppurative or ulcerative lesions associated therewith. In this connexion I must particularly mention disease of the lower jaw, sometimes following injury from tooth extraction, of which I have met with some very definite examples. More commonly, however, the mischief is quite remote. 3. Affections of the throat, tonsils, naso-pharynx, or nasal cavities. I feel that I am trenching here on difficult ground, but there can be no doubt as to the presence, not uncommonly, of tubercle bacilli, or organisms resembling them, in these parts, as well as of non-tuberculous lesions of a possibly infective character, and experience has taught me to be on my guard against them in relation to thoracic phthisis, especially if there are chronic so-called scrofulous conditions. 4. Ischio-rectal abscess and subsequent fistula in ano. I regard these conditions as most important foci of auto-infection in relation to thoracic phthisis, of which I have met with many conspicuous examples, and anything of this nature ought to be always regarded as a source of serious danger in individual cases, which calls for efficient operative treatment as a preventive measure. 5. Other more definite tuberculous lesions affecting structures outside the chest, especially abdominal. Thus thoracic phthisis may follow such disease of the intestines, not forgetting the appendix vermiformis; the peritoneum (no doubt in some cases by direct extension through the diaphragm); the lacteal glands; the urinary system; the prostate gland; the sexual or generative apparatus in males or females; and the suprarenal capsules. Tuberculous affections of the skin may also be noticed here. As regards the intestines, I have been much surprised at the statement of Koch and others that primary implication of these structures is rare, as I have met with several very definite cases of this nature. 6. Latent foci of infection within the chest. Cases originating from such foci may be fairly recognised as a definite group due to auto-infection. It is a well-known fact that the quiescent remains of a former limited phthisical lesion are often found post mortem, of which there is no history whatever, or it has only been suspected, or if detected has been arrested and cured. Again, there may be the remnants of a pleurisy, or the mediastinal glands may be infected with tubercle bacilli or be the seat of definite tubercle or its products, of which we know nothing. Under these circumstances some cause, it may be a very slight and inadequate one, such as a chill, starts an active process, which may end in very rapid and grave tuberculosis, involving different structures within the chest.

### *C.—Personal Inherent Predisposition.*

It requires some courage nowadays even to hint that consumption is not altogether a matter of organisms and infection, and especially that there is any inherent personal tendency to the complaint. I congratulate Sir Dyce Duckworth on the admirable address which he delivered before the Liverpool Medical Institution on Oct. 24th, 1901, on "The Personal Factor in Tuberculosis," in which he stuck up manfully for the "host," and on the discussion which it elicited. I desire to support him in a mild and humble sort of way, and to bring before you prominently what experience has taught me with regard to personal intrinsic conditions as predisposing to thoracic phthisis. It is not necessary to refer particularly to race, sex, or age, except to observe that thoracic phthisis may be met with in very young subjects, as well as in old people.

1. *Heredity.*—It must be well known to you all that for a considerable time the idea has been gaining ground that the old notion of the hereditary character of consumption was entirely wrong, and not a few in our profession support this idea in the most aggressive and dogmatic fashion, looking almost with contempt upon anyone who is in any degree of the contrary opinion. The late Sir Richard Thorne, shortly before his lamented death, in an address on "The Prevention of Consumption," which contained much valuable advice, if it could only be carried out, used very strong language on this point, urging his hearers not to "go on believing the lie that consumption ran in families." Koch, at the Congress on Tuberculosis, made this statement: "It has been demonstrated by thorough investigation that, though hereditary tuberculosis was not absolutely non-existent, it was, nevertheless, extremely rare, and we were at liberty in considering our practical measures to leave that form of origination entirely out of account." When an overwhelming authority speaks thus, *ex cathedrâ*, what can one say? And yet I venture to affirm that it is a most dangerous doctrine. Of course, the influence of heredity has been greatly exaggerated in times past, and a large proportion of cases attributed to this cause were merely the result of infection associated with family life. But I have seen too much of hereditary tuberculosis and phthisis under a variety of circumstances where the patients were not exposed to any possible infection beyond what falls to the common lot to allow myself to shut my eyes to the fact that it is an etiological factor which ought never to be disregarded or made light of, from different points of view. I do not mean to say that the occurrence of a single case of consumption in a family, or still more in some collateral relative, implies heredity, but the probability of the transmission of the complaint in this way is increased in proportion as it seems to run in a family, particularly through succeeding generations, or if the predisposition exists on both sides.

Now I do not wish to make too much of this question of heredity, and it is decidedly necessary to warn people, on the other hand, against supposing that, because they come

from a sound stock, they are therefore in little or no danger of becoming phthisical, and can take any liberties they please with their health. It is a well-known fact that a considerable proportion of individuals who suffer from consumption have no hereditary tendency to the complaint whatever, so far as can be ascertained, though I have reason to know that statistics and statements on this point cannot be implicitly relied upon.

There are several interesting practical questions relating to the hereditary aspect of phthisis, but I cannot discuss them on the present occasion, and I will only mention the fact that often there is nothing in the general appearance, physiognomy, or conformation of the individual, or any obvious structural or other peculiarities, which indicate such predisposition. Indeed, what has struck me is the number of instances in which before the development of the complaint the patient has been healthy in all respects, well nourished, or even strong and robust; while he may have been active, perhaps too active, in games, athletics, sports, and the like; and yet, without any special exposure to infection, he becomes consumptive. It may also be noted, on the other hand, that young subjects with a strong hereditary taint, and obviously delicate, may, by proper management, develop into healthy individuals, and never have any tuberculous mischief.

2. *Diathesis and temperament.*—I take it for granted that you are all familiar with the characters which have been attributed to the "tubercular" and "scrofulous or strumous" diathesis respectively, and to which, at one time, considerable importance was attached. In my experience it certainly has not been common to find persons not actually suffering from tuberculosis in some form who correspond in any marked degree with the classical description of the tuberculous diathesis; but, still, it is sometimes observed in a pronounced form.

The scrofulous diathesis is much more frequently met with, but Sir Dyce Duckworth, in the address to which I have already referred, strenuously opposed the modern doctrine that "scrofula is tuberculosis," and maintained that it was possible to be scrofulous throughout life without becoming tuberculous. I am inclined to agree with him; but, on the other hand, those persons whom we are accustomed to describe as "strumous" or "scrofulous" are certainly predisposed in a marked degree to tuberculosis and to thoracic phthisis, for reasons which can be easily explained. In my experience, temperament has not appeared to have much, if any, influence in relation to the disease; nor have I been able to associate with it any particular facial physiognomy.

3. *Bodily conformation and general condition.*—The majority of persons who become phthisical are of a very ordinary type, and many are in every way quite up to the average standard as regards conformation and general condition. Not a few, indeed, are models of health, and it is an important practical point that no individual is safe, however robust he may be, and however free from any hereditary taint. At the same time the predisposition to the disease is decidedly increased in subjects who are naturally "delicate," of slender build, and feeble constitution, with signs of textural frailty, quite apart from heredity; and one always feels anxious about young persons who are pale, thin, and anæmic, and especially if they grow rapidly to an unusual height without corresponding development of the bodily frame. My experience is quite in accord with that of Dr. James E. Pollock as to the comparative infrequency of phthisis among chlorotic females, though, of course, it is dangerous to assume such immunity in any individual case.

### *D.—Causes Acting on the General System—Acquired; Personal Predisposition.*

Now we come to one of the most formidable and often sad aspects of the etiology of thoracic phthisis, and that is to consider the causes or conditions more immediately associated with the individual and his mode of life, which are such potent factors in producing what may be termed an "acquired predisposition." They not only lower or depress the system generally, but render the local structures much less able to resist the pathogenic action of the invading organisms. The causes are but too well known, and they make one almost despair of producing any marked or lasting effect upon the prevalence of consumption. There are certain special factors belonging to this category which have, however, a wider influence, and to these more particular reference will be made later. Although they are quite familiar, it may be well to mention prominently, without entering into any details, the general nature of the causes which come under this head, and they may be grouped as follows:—

1. Insanitary conditions and surroundings, as regards overcrowding, habitual want of ventilation, entire absence of sunlight, close confinement in a used-up or even foul atmosphere, want of cleanliness, both personal and domestic, and, in short, often an entire neglect of all recognised sanitary or hygienic regulations which affect the general health. This is further frequently associated with cold, damp, insufficient clothing, and other distressing accompaniments of poverty.

2. Deficiency of proper nutriment, either as regards quantity or quality of food, or both, from an inability to obtain it—in a word, from various degrees of starvation—especially in young and growing subjects, or because the individual is unable or unwilling to take sufficient or suitable diet, or from neglect of proper meals. Phthisis may supervene in cases of so-called "anorexia nervosa"; and I have certainly known the disease to be promoted by religious fasting. The want of good milk is, in my opinion, notwithstanding the dread of infection, a powerful cause of the tendency to tuberculosis in children.

3. Intemperance, and various other injurious habits, as well as faulty modes of living. Among these may be mentioned want of exercise or of any active out-door life, or, on the other hand, frequent excessive exertion and fatigue; late hours, with their almost inevitable accompaniments, which are such a common feature in modern social life; sexual excesses or masturbation; and, in not a few instances, an utter disregard of all "rules of health," culminating in what I may term "general debauchery," the effects of which in helping to develop thoracic phthisis are but too manifest. Alcohol will be separately considered.

4. Occupation, which is another of the causes to be referred to separately.

5. Conditions which occasion a frequent or more or less constant drain upon the system, often accompanied with want of adequate or proper nourishment, and other factors detrimental to health, especially rapid child-bearing and prolonged lactation, and probably menorrhagia in some cases. A chronic non-tuberculous diarrhœa may be followed by phthisis.

6. Mental depressing causes of various kinds. I feel sure that causes coming under this category do not always receive the attention they deserve as factors predisposing to tuberculosis. Undoubtedly excessive mental work or study may have more or less influence, especially when associated with other causes. Other depressing factors associated with the nervous system are prolonged worry or anxiety, profound and lasting grief, pronounced and persistent lowness of spirits or melancholia, the shock and depression or other effects produced by sudden and unexpected loss of fortune or other social reverse, and now and then disappointed affection or ambition. The frequent occurrence of phthisis amongst those mentally affected is well known, but here various causes are usually at work.

### *E.—External Conditions and Environment.*

Under this head come the questions relating to climate, season, temperature, meteorological changes, soil, altitude, locality, residence and its surroundings, and allied conditions, as predisposing to thoracic phthisis. That these factors have considerable and widespread influence cannot be doubted, and it is well to recognise them to the fullest extent, though, of course, being prepared to meet with the disease under all possible circumstances, even in the higher altitudes, which ought to be exempt. This aspect of the subject is well understood, and it is adequately dealt with in text-books and special works on consumption, though I have noted in some quarters a tendency to throw doubt upon certain views commonly entertained. In this country we are all but too familiar with the meteorological conditions and changes and other factors which depress the general system, and at the same time tend to damage our respiratory structures. We have one advantage over some of the warmer and drier climates in that the tubercle bacilli in sputum have, as a rule, not such a chance of drying rapidly and becoming diffused through the atmosphere, and to a certain extent, therefore, we may be in less danger of infection; though, on the other hand, we have during the greatest part of the year no powerful sunshine to destroy them. The question of soil is an important one, not only in its more or less wide scope, but also in relation to particular residences.

The late Sir Richard Thorne, in the address to which I have before referred, affirmed in regard to the prevention of phthisis that nothing would do good unless people refused to live on a damp sub-soil. The beneficial effects of efficient drainage as a preventive measure have been demonstrated in several instances and are always worthy of attention, though they have not proved so permanently useful in some localities as was anticipated at first.

### *F.—Special Causes.*

There are three factors which stand out so prominently in their etiological relation to thoracic phthisis, while often acting more or less together, and which are so much under our control, that they demand special notice—namely, *air*, *alcohol*, and *occupation*. An entire lecture might easily be devoted to these factors, but I can only refer to them very briefly.

*Air.*—The injurious effects upon the respiratory organs which the air we breathe is capable of producing are obvious enough, and, theoretically at least, they appear at the present day to be widely, if not almost universally, recognised and appreciated. Indeed, fresh air and plenty of it is now the popular cry everywhere, and the "open-air" treatment holds the field, and, as one authority says, "has come to stay." The idea is by no means new or of modern growth, as many seem to imagine, for writers have insisted upon it long ago. Amongst others the late Dr. MacCormac of Belfast, the illustrious father of an illustrious son, strenuously insisted upon the dangers of "re-breathed" air in relation to consumption. The New Sydenham Society has recently republished a remarkable essay on "The Treatment and Cure of Pulmonary Consumption" by Dr. George Bodington, a general practitioner at Sutton Coldfield, who died on Feb. 5th, 1882, in his eighty-third year. This essay was first published in 1840. Dr. Bodington certainly appears to have been the originator of the modern "open-air treatment" in its main essentials, and he particularly advocated the advantages of pure, dry, "frosty" air. He earnestly protested against keeping consumptives closely and carefully confined, as was then the practice, as "forcing them to breathe over and over again the same foul air contaminated with diseased effluvia of their own persons."

The ways in which the inspired air may be injurious are various, such as by conveying infection, lowering the general tone and resisting power of the individual, irritating the respiratory passages, and so on, but I cannot enter into details on this point. But coming to the practical aspect of the matter, what is the actual state of things even now with regard to the air we are obliged to breathe under various circumstances? Well, I think it is about as bad as it can be, not only in our large cities and towns but everywhere. To say nothing of the conditions under which the working classes, and especially the poorer members of the community, are compelled to live and work, the idea of the necessity of fresh air and good ventilation is by no means carried out in practice in the homes of the so-called "middle" and "upper" classes in anything like the degree in which it ought to be, and I really think that medical men are sometimes the worst offenders in this respect. Then go into almost any shop or office, and you can seldom fail to be oppressed with the feeling of "stuffiness" and "used-up air." I have already alluded to post-offices, and amongst other really dangerous places may be mentioned courts of justice, where recently some of our judges have been seriously affected by the vitiated air; places of public entertainment, in some of which things are made far worse by the modern practice of permitting smoking, the atmosphere being often thus rendered absolutely irrespirable; churches and chapels; restaurants or dining-saloons; and railway-carriages or other public vehicles. When you are half stifled with the foul atmosphere, try to open a window, and you will soon find what people think of fresh air and ventilation. But bad as things are in this country my experience is that they are far worse on the continent, where everybody is supposed to be so advanced in all kinds of scientific knowledge and practice, and where the "open-air" treatment is so flourishing. In short, while there is so much talk about the imperative necessity of proper ventilation, fresh air, open air, and the like, as a matter of fact the large majority of people are still living more or less constantly in an impure or foul atmosphere, often from choice, which cannot but have a widespread and powerful influence in the production and propagation of thoracic phthisis.

*Alcohol.*—The evil effects of intemperance in the use of alcohol in relation to thoracic phthisis are appalling and incalculable. Not only does this factor act as a powerful predisposing cause in starting the disease in different ways, but it is often continued during its progress, thus helping seriously to promote its activity and to hasten its course. In his address at the Congress on Tuberculosis on "The Prevention of Consumption," Brouardel said that "alcoholism is the most potent factor in propagating tuberculosis," and "any measures, state or individual, tending to limit the ravages of alcoholism, will be our most precious auxiliaries in the crusade against tuberculosis." Dr. J. F. W. Tatham has shown by his statistics the connexion between occupation as affording temptations or opportunities for indulgence in drink, and the mortality from phthisis. Indeed, its effects are but too evident on all hands, and create a feeling almost of despair.

*Occupation.*—This etiological factor also accounts for an enormous number of cases of thoracic phthisis, directly or indirectly, and it acts as a rule in more ways than one. Indoor occupations often expose individuals to almost every possible anti-hygienic condition that can be imagined, including the habitual inhalation of a close, used-up, or foul atmosphere for long hours, and frequently accompanied with bad living. Then the dangers of infection are commonly very considerable, even when precautions are taken, which, however, are still much neglected. On the whole, outdoor occupations are much more favourable, except in so far as they entail exposure to cold and wet, to marked changes of temperature, or to the vicissitudes of weather, which tend to affect the respiratory organs. No doubt, however, individuals can efficiently harden themselves in a rational way against such causes. Other injurious aspects of occupation are that it frequently involves the direct inhalation of irritant particles; hard physical work, or working in certain postures, which tends to damage the thoracic structures; mental strain or anxiety, or worry; or the dangers of alcoholism already referred to.

### *G.—Local Causes.*

The injurious effects of different causes connected more immediately with the chest or respiratory organs, as factors in the development of thoracic phthisis, do not, judging by my own observation, as a rule receive the consideration which they deserve, and I desire to draw special attention to the following points.

1. Although a large proportion of phthisical patients start with a chest quite up to the average in conformation and capacity, still it is obvious that the more contracted and ill-developed this region is, the worse must it be for the lungs, and the more likely are they to become damaged. The different forms of so-called "phthinoid" chest are well known. I cannot doubt for a moment, further, that habitual imperfect use of these organs, or compression of the thorax by belts, tight-lacing, unyielding corsets, and the like, are more or less conducive to phthisis. It may also be associated with various chest-deformities, especially when these are pronounced, though certainly it is remarkable how often persons who present even extreme deformities of this region escape. On the other hand, I have met with a considerable number of cases, particularly among soldiers, where over-training and undue distension of the chest and lungs in subjects unfitted for such development has appeared to me to be a predisposing factor in relation to consumption.

2. Traumatic causes may certainly lead, directly or indirectly, to the development of thoracic phthisis. The lodgment of a foreign body in a bronchus or lung, which cannot be removed by operation, accounts for one very definite class of cases. Blows on the chest, without any obvious injury to the solid framework, and with or without hæmoptysis, may also start the trouble, or render it active in chronic and quiescent cases. A patient of mine, an amateur boxer, who suffered from very chronic phthisis, was struck over the seat of disease in a friendly encounter, which caused profuse hæmoptysis, and from that moment he went rapidly down hill. Traumatic lesions of the thoracic walls, of a more definite and serious nature, such as fractures or gun-shot wounds, may also be followed by consumption. I have seen a remarkable case from time to time during recent years, in which the chest was run over, and whatever actual damage was done at the time, the condition is now one of very definite phthisis affecting the upper part of both lungs.

3. The effects of local irritants, of various kinds and degrees, which are inhaled and thus come into direct contact

with the air-passages or pulmonary structures, are obviously of much moment in relation to the etiology of phthisis. Though some people seem to think that these organs can resist anything except the tubercle bacillus, we cannot ignore the directly injurious effects of very cold or cold and damp air, as well as of an impure atmosphere or one laden with dust, soot, fog, smoke, or what not, with which we are all but too familiar. Dare I venture to hint that even excessive tobacco-smoking is not free from danger from this aspect? The most pronounced and definite causes coming under this category, however, are the easily recognised irritants, either of a chemical nature, or in the form of minute solid particles, the latter being chiefly inhaled in connexion with different occupations, giving rise to the various forms of *pneumoconiosis* or so-called "mechanical phthisis." I have known some very definite cases of thoracic phthisis to originate from inhaling irritant gases in chemical laboratories. The interesting and important fact may be noted here that typical tubercles can be produced even in man by mechanical particles.

4. Another factor which I feel sure is not uncommonly important in relation to the etiology of phthisis, but which is much disregarded, is the act of coughing, especially when severe and persistent, which I believe has a damaging effect upon the apices of the lungs, as well as being injurious in other ways. Such cough is frequently quite independent of pulmonary trouble, being more particularly associated with the throat and main air-passage. In relation to the throat an elongated uvula has to be specially borne in mind, and I have met with very definite cases of irrepressible cough due to this cause, in which well-marked physical signs appeared at one or both apices, but these cleared up completely after removal of the uvula and consequent cessation of the cough. While referring to the throat, it may be also noted that great enlargement of the tonsils as well as adenoids may cause further trouble by obstructing the breathing, thus interfering with the proper use of the lungs and the development of the chest. With regard to the larynx and trachea, apart from actual tuberculous disease, chronic or recurring affections of these parts may certainly promote the development of thoracic phthisis, and even huskiness or hoarseness, and still more cough originating here, should never be neglected. From this point of view, excessive use or straining of the voice, in preaching, public speaking, teaching in schools, singing, or shouting in the streets, as in the case of costermongers, hawkers, cheap-jacks, &c., may indirectly predispose to phthisis.

5. The relation of pulmonary hæmorrhage to thoracic phthisis as an etiological factor cannot, in my opinion, be questioned for a moment, and I fail to see why there should be any difficulty in acknowledging it. We meet with cases of blood-spitting, even in considerable amount, the source of which cannot be located, and in which complete recovery follows with no after ill-effects. When, however, hæmorrhage takes place from some part of a lung, or blood finds its way there from the air-passages, it is very liable to originate further trouble, forming a suitable medium for the growth and multiplication of tubercle bacilli. It is generally assumed that such hæmorrhage always implies previous tuberculous mischief but this is by no means proved. I have met with cases where hæmoptysis resulted from a definite and powerful strain, in connexion with running, swimming, cycling, and different kinds of athletics, or from a blow on the chest, in persons apparently perfectly healthy, and this was followed by acute phthisis, with rapid formation of cavities, or a progressive but slower type of the disease. But even where there has been previous trouble in the lung, which is often evident enough, the occurrence of considerable or continuous hæmoptysis often seems to give it a fresh start, and to make it advance with increasing severity and rapidity.

### *II.—Local Predisposing Morbid Conditions.*

It cannot be too strongly insisted upon that thoracic phthisis is by no means always a primary and independent disease, but is in a fair proportion of cases added to or grafted upon, so to speak, some preceding definite morbid condition within the chest. This fact does not in any way invalidate the tuberculosis theory, or call in question the influence of tubercle bacilli. Indeed, it is generally believed that these organisms cannot do harm unless there has been some lesion which enables them to gain a footing, be it only a slight erosion of the mucous surface or removal of the ciliated epithelium from any cause. The more obvious conditions which from this point of view may help in the development of phthisis may be thus indicated:—

1. Persistent or repeated catarrh of the throat, main air-passages, or larger bronchi.

2. Pronounced chronic bronchitis, usually associated with more or less emphysema. The danger of the supervention of tuberculosis in cases of this kind should always be borne in mind; and I emphatically affirm, from much personal observation, that phthisis is not uncommon in cases of extensive or even extreme emphysema. It may also follow bronchiectasis. Not a few "asthmatic" cases become phthisical sooner or later.

3. Pneumonia of different kinds. The general view is that any case of pneumonia which, either speedily or gradually, turns out to be phthisical, is really tuberculous from the outset. While, no doubt, this is true as a rule, I can see no reason why a pneumonic condition not originally tuberculous may not become infected, especially if the morbid products remain long unabsorbed. In certain cases of so-called "fibroid phthisis" there is unquestionably no tubercle at first, though this may develop subsequently.

4. Pleuritic conditions. The relation of pleurisy to thoracic phthisis is a very important and interesting problem, to which I shall again have to refer in another connexion. I do not at all agree with the opinion now very widely entertained that the large majority, or as some think, practically all cases, of pleurisy with effusion are essentially tuberculous. That phthisis often develops in course of time in such cases is another matter, though the statistics on this point differ considerably. I have followed a large number of cases for many years where there have been no after-effects of this kind and the patients still enjoy excellent health. My explanation of the frequent occurrence of phthisis after pleurisy, sooner or later, is that no proper care has been taken to prevent the formation of firm and thick adhesions or to expand the lung properly, and in this view I believe that I am supported by Koch. Similar adhesions form occasionally after dry pleurisy, and they are also often left after pneumonia. Of course, if unabsorbed morbid products remain in the pleural cavity the danger is still greater. Remarkable extensive adhesions sometimes form very slowly and insidiously, even on both sides, and I have known phthisis to develop in such cases. However we look upon this question, there can be no doubt as to the practical relation of pleurisy and its effects to thoracic phthisis as etiological or pathological factors of considerable importance, favouring the action of tubercle bacilli or other organisms.

There is another class of cases to which I must allude here, for I feel sure that the condition does not uncommonly lay the foundation for apical phthisis, but is seldom recognised—namely, those in which there is a firm adhesion at the apex of the lung, binding it down, usually on the right side, due to hard manual work or other causes producing local irritation. I have a strong impression that many of the cases of "cured" phthisis at an apex are of this nature originally, the condition favouring the invasion of organisms.

Phthisis may follow non-tuberculous empyema, especially if it bursts into the lung or is not efficiently treated by operation. This mode of origin of the complaint is, however, comparatively exceptional in proportion to the number of cases of empyema which are met with in practice.

5. Pressure upon or other obstruction of the trachea or of a main bronchus. The pulmonary changes which are likely to follow difficulties of this nature may certainly lay the foundation for phthisis and are very favourable to infection. In this way the complaint may complicate aneurysm, mediastinal tumour, enlargement of the bronchial glands, not necessarily tuberculous, syphilitic changes involving the air-passages, and other conditions. Aneurysm has also been supposed to help in the development of phthisis by reducing the activity of the pulmonary circulation.

6. Miscellaneous conditions. Under this head it will suffice to note that thoracic phthisis, of a tuberculous nature, may supervene upon syphilitic lesions in the lung, pulmonary abscess or growth, abscess opening into the lung from the abdomen, hydatids, congenital disease of the pulmonary artery, and possibly actinomycosis.

### *1.—General or Remote Predisposing Diseases.*

An important group of cases of thoracic phthisis is that in which the complaint is set up in connexion with certain acute diseases, usually as a sequel; or which supervene in

the course of chronic general morbid conditions or particular complaints, having nothing whatever to do directly with tuberculosis or with the chest. Its well-known relation to measles, whooping-cough, and influenza is readily explained; and it also occasionally follows enteric fever or other acute specific diseases. I feel sure that the constitutional condition produced by congenital syphilis sometimes predisposes to thoracic phthisis, of a pronounced tuberculous type. Amongst other diseases with which it may be associated as a secondary event it will suffice to mention diabetes, prolonged indigestion or definite affections of the alimentary canal interfering with the consumption or assimilation of food, gastric ulcer, hepatic cirrhosis, chronic Bright's disease, arterio-sclerosis, chronic cardiac disease, and various nervous diseases, especially the different forms of sclerosis of the nerve centres.

On the other hand, certain conditions are believed to be antagonistic to tuberculosis, but to these time forbids me to refer, except to say that I by no means agree with all that is stated on this point. Sir Dyce Duckworth is strongly of opinion that persons of gouty predisposition are largely immunised against tuberculosis; and that when this lesion occurs in the gouty its course is much modified, as it makes but little progress as a rule, tends to obsolescence, and fibrotic changes are prominent. I believe that there is a sound foundation for these statements.

*Combination of causes.*—I have endeavoured in the preceding discussion to indicate in a practical manner what I believe to be the important individual factors in originating and promoting the development of thoracic phthisis. In the large majority of cases, however, these are combined in various ways, and unfortunately we often have to deal with numerous and diverse causes, acting in concert. Hence it s easy to understand why the complaint is so much more prevalent in large cities and towns, especially in their more crowded and poorer districts; in localities where there are numerous and extensive manufactories of different kinds; and among communities gathered together in large numbers in various institutions, which I need not enumerate. Phthisis is, however, but too prevalent in the smaller towns and villages, as well as in country districts, where the etiological conditions are much less complicated. Moreover, it is not uncommon even in houses and homes which may be quite isolated, and to all appearance under most favourable circumstances from a sanitary point of view. Of course, climate and season have often considerable influence in such cases; but we have also to bear in mind particularly the dangers of preventable infection, hereditary endency, and acquired predisposition, which is unfortunately ut too frequently due to habits.

As a rule, it is not possible to refer the onset of thoracic phthisis to any distinct and recognisable *exciting cause*. Reference has been made to certain modes of origin of the disease which might come under this category, such as when it follows an acute illness, or results from injury or accidental hæmorrhage. I would here, however, warn against the modern tendency to ignore altogether the old-fashioned ideas as to the danger, from the aspect of exciting causes, of getting wet through and remaining in wet clothes; chill of any kind, but especially when perspiring, even in the summer; exposure to cold and damp air, or to certain winds; inclement seasons; defective clothing, and the like. These may set up an acute affection of some part of the respiratory apparatus, which, if not phthisical from the first, becomes so later. Nor is it safe to make light of even a "slight cold," which, if neglected, may undoubtedly lay the foundation for this complaint.

The preventive treatment of thoracic phthisis can only be rationally founded on a full and comprehensive knowledge and appreciation of its pathology and etiology in all its details. The tendency nowadays is unquestionably to take a narrow, incomplete, often entirely one-sided view of this aspect of the subject, and to lose sight of many important causes or conditions which ought never to be forgotten or overlooked. Unfortunately, when we come face to face with the problems we have to grapple with, our difficulties begin, and I must honestly say that, humanity and the inevitable conditions of life and of so-called civilisation being what they are, I cannot share in the extraordinarily hopeful views now so widely entertained and so freely expressed as to the final eradication and extermination of this "terrible scourge." Still, we can do a great deal as a profession, if we work on intelligent and practical lines. Obviously the prevention of infection is of first importance, and in relation to this question I will only say on the present occasion that I should like to see far more stringent measures taken with regard to the disgusting habit of spitting in public places; that I consider it much safer to destroy by fire all phthisical sputum, when this is practicable, rather than merely to disinfect it; and that I am strongly in favour of voluntary notification of cases of phthisis.

# NOTES ON THE TREATMENT OF FURUNCULOSIS, SYCOSIS, AND ACNE BY THE INOCULATION OF A STAPHYLOCOCCUS VACCINE,

## AND GENERALLY ON THE TREATMENT OF LOCALISED BACTERIAL INVASIONS BY THERAPEUTIC INOCULATIONS OF THE CORRESPONDING BACTERIAL VACCINES.

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THE circumstance that inoculation against pyogenic bacteria has not, up to the present, been resorted to would seem to be due to the fact that our range of thought is in this, as in every other direction, limited by pre-suppositions. The following are among the pre-suppositions which are current in connexion with inoculation. 1. Since methods of inoculation find their special sphere of application in connexion with septicæmic diseases there would be little prospect of a useful application of such methods in connexion with any local invasion of the tissues by pyogenic bacteria. 2. Since pyogenic micro-organisms can always be held off from operation wounds by a rigid observance of aseptic precautions there would be no prospect of a useful application of inoculations such as we have here in view in connexion with operative procedures. 3. Since bacterial invasions of the skin and mucous membranes can be dealt with by the application of chemical antiseptics a resort to inoculations directed against the invading bacteria would here also be out of place. 4. Inoculations with vaccines can be of avail only when they forestall infection. 5. Where a vaccine containing toxic bacterial products is introduced into the organism of a patient who is already infected this must inevitably be followed by an aggravation of that patient's condition.

Let us take the above assumptions in order and see how far each of them is justified.—The first assumption can be disposed of in a few words. It is in point of fact merely the expression of the belief of a period when inoculation—using the term in its widest sense—had as yet been applied only in connexion with the prophylaxis of small-pox. Since the period in question methods of inoculation have, as reflection will show, been successfully applied in connexion with almost every form of bacterial invasion.—In connexion with the second assumption it will suffice to remark that even assuming that inoculations against pyogenic bacteria would fail to find any useful application in connexion with operative procedures, such inoculations might conceivably render service in connexion with bacterial invasions of the skin and mucous membranes.—The next assumption—to wit the assumption that bacterial invasions of the skin and mucous membranes can be dealt with by the application of chemical antiseptics—altogether ignores the defects and limitations of this method of treatment. These defects and limitations—already fully realised in connexion with the treatment of operation wounds—are, (*a*) the injury to the tissues inflicted by the antiseptic; (*b*) the difficulty of destroying bacteria which have penetrated below the surface; (*c*) the difficulty of applying the antiseptic over the whole affected area in such a manner as to make an end once for all of the invading bacteria; and (*d*) the difficulty of preventing the re-invasion of the disinfected from the neighbouring still infected areas. Let us note that, assuming that it were found possible to inoculate in such a manner as to call into action the defensive powers of the organism, all these difficulties would have been effectually overcome.—We next pass on to consider how far we can uphold the assumption that inoculations with bacterial vaccines must be unavailing unless where they forestall infection, and the further assumption that inoculations of sterilised bacterial cultures—i.e., inoculations which involve the introduction of toxic bacterial substances into the organism—are necessarily

associated with risk when undertaken upon patients who are already the subject of the corresponding bacterial infections. Consideration shows that these assumptions express the results of experience derived from an observation of the effect of inoculations undertaken in the case of animals and men when already affected with septicæmic diseases. Confining ourselves to the case of man and to the case of inoculations undertaken with sterilised bacterial cultures, there would, indeed, seem grounds for believing that an aggravation of the patient's condition has in some instances followed in the case where the patient has been inoculated with anti-typhoid[1] and anti-plague[2] vaccine respectively while in the incubation stage of these diseases. But we cannot generalise from such instances. For I have in a previous communication[3] dealing with the changes effected in the blood by anti-typhoid inoculation pointed out that there is an all-important difference between the effects produced respectively by large and small doses of vaccine. It was shown in the paper just referred to (1) that where the dose of bacterial vaccine employed was sufficient to produce marked constitutional symptoms inoculation was followed, first, by a negative phase of diminished bactericidal power—corresponding, it may be presumed, to a phase of diminished resistance—and, then, after an interval of a few days by a positive phase of increased bactericidal power—corresponding, it may be presumed, to a phase of increased resistance; (2) that where the dose of vaccine was such as to produce only very slight constitutional disturbance the negative phase was suppressed, the positive phase being already distinctly marked within 24 hours after inoculation; and (3) that where the dose of vaccine was such as to produce very considerable constitutional disturbance the negative phase was exaggerated and prolonged, while the positive phase was considerably, possibly indefinitely, postponed.

Since an essentially similar succession of a negative and a positive phase manifests itself after the inoculation of the toxins of both tetanus and diphtheria and, as we shall see below, also in connexion with the inoculation of staphylococcus vaccine, and since the extent and duration of the phase of diminished resistance are in each case a simple function of the dose administered, it would seem clear that the doctrine of the necessary inefficacy and invariable risk of inoculations undertaken upon patients already infected must be abandoned. Manifestly, inoculation will be associated with risk only where the dose of vaccine employed is such as seriously to diminish the patient's resisting power.

It may be noted here that Mr. Haffkine has from the outset contended that his anti-plague vaccine possesses a power of aborting and diminishing the severity of an attack of plague in the case of any patient who may have been inoculated in the incubation stage of the disease. Mr. Haffkine is entitled to the fullest recognition of the fact that in certain of the cases recently recorded by Miss Corthorn[4] and, it may be presumed, in other cases included in the statistical table published by Major W. B. Bannerman, I.M.S.,[5] the event would appear to have been quite in accordance with Mr. Haffkine's anticipations.

Leaving out of consideration all incidental issues, such as that of the expediency of inoculating in the incubation stage of any septicæmic disease unless with duly reduced doses of a standardised vaccine, let us here concentrate our attention upon the fact that it would seem possible—given the employment of the appropriate dose of a vaccine and given also certain other conditions presently to be considered—to obtain benefit from bacterial inoculations even in the case where the patient is already the subject of bacterial infection. If it holds true that inoculations with bacterial vaccines may upon occasion have a therapeutic value in the incipient stages of bacterial invasions which may afterwards assume a septicæmic form, it must *a fortiori* hold true that inoculations conducted with appropriate doses of bacterial vaccines may render useful services in the case of bacterial invasions which manifest themselves from first to last only in the form of localised inflammatory processes. For—and this is clearly brought out by a comparative study of bacterial disease in animals, as well as by the study of any series of cases of one and the same bacterial infection in man—the localisation and restriction of a bacterial invasion may always be taken as an indication of a relatively high grade of resistance on the part of the infected organism.

If we consider the matter rightly we shall see that the process of bacterial inoculation as applied to a patient who is the subject of a bacterial invasion is, in reality, a process of temporarily taking away from a patient's power of resistance with a view to his receiving back that power with usury. It is, in short, a process of trading upon the patient's balance of resistance. When exploiting the method it will, then, be wise to inform ourselves beforehand concerning the resisting power of the patient. It will be wise, also, before adventuring, to learn what we can about the demands which will be made upon the patient's resisting power by the inoculation of that definite quantum of the bacterial vaccine which we propose to employ.

Having now, so far as I can, made clear the situation, I pass on to set forth the results of some preliminary work recently undertaken in connexion with the therapeutic application of anti-staphylococcus inoculations in the treatment of localised staphylococcus invasions. The vaccines employed consisted in each case of staphylococcus cultures which had been sterilised by heating. The cases, six in number, which are reported below include all that I have treated by this method.

CASE 1.—The patient, a man, 40 years of age, consulted me in September, 1900, with a view to seeing whether anything could be done for him. He had suffered from furunculosis complicated by sycosis and eczema of the face since 1893. In that year, while engaged in clearing out a tracheotomy tube which had been removed from a patient who had been operated upon for acute laryngitis, he accidentally inoculated himself in the forefinger with some of the septic material. In spite of three deep incisions made successively into the finger and the palm of the hand infection spread upwards to the axilla (giving origin there to a bubo) and thence onwards into the blood-stream, setting up high fever and septic peritonitis. Since that time the patient, who had not previously suffered in this way, had been afflicted with the disorders referred to above. During the seven years which had elapsed since the onset the patient declared that he had never been free from boils for more than three months consecutively. Change of climate, every form of medicinal treatment, and local applications of the most varied description had all failed to afford any permanent relief. The patient was now suffering from an exacerbation of his symptoms. Recently he had hardly ever been quite free from styes on the eye and boils. These last apparently occurred in two varieties—small superficial boils taking their origin in the skin on the neck and face, and larger deep-seated boils occurring in the subcutaneous tissue in any and every region of the body. The condition of sycosis was associated with weeping eczema and was best marked on the region of the chin. The infiltration of the deeper layers of the skin was even there relatively inconsiderable. The hair follicles of the eyelashes and eyebrows were affected by an inflammatory process similar to that which was affecting the hair follicles of the beard.

*Data of the bacteriological examination of the contents of the boils.*—A cultivation, made on Sept. 16th, 1900, from a small superficial boil on the face yielded a pure cultivation of the staphylococcus albus. A cultivation made on Sept. 19th from a larger and more deep-seated boil on the forehead yielded a pure cultivation of the staphylococcus aureus. A cultivation made on the 24th from a large boil on the forearm yielded a pure cultivation of the staphylococcus aureus.

*Data of the blood examinations instituted before inoculation.*—A count of the different varieties of white corpuscles showed these to be present in the blood in normal proportions. A measurement[6] of the alkalinity of the serum showed a normal degree of alkalinity: $\frac{N}{35}$.

*Estimation of the inhibitory power exerted by the serum on the growth of the staphylococcus.*—Comparative counts[7] were made of the number of staphylococcus colonies which developed in a series of measured volumes of gelatin culture mixed (*a*) with sterile broth, (*b*) with serum derived from normal men, and (*c*) with serum derived from the patient.

[1] THE LANCET, Sept. 14th, 1901, p. 715.
[2] Report of the Indian Plague Commission, Chapter IV., p. 195.
[3] THE LANCET, Sept. 14th, 1901, p. 715.
[4] Brit. Med. Jour., Jan 25th, 1902.
[5] Ibid., Sept. 14th, 1901.

[6] The technique employed was that described by me in THE LANCET of Sept. 18th, 1897, p. 719.
[7] The technique employed was that described by me in THE LANCET of Dec. 1st, 1900, p. 1556.

In a somewhat extensive series of observations—carried out on three samples of the patient's blood and upon 13 control samples of normal blood drawn off from six normal persons—only inconstant and very inconsiderable differences were found between the number of colonies developing in the tubes filled in with three different admixtures particularised above. We are thus entitled to conclude that neither the serum of the patient nor any of the control sera exerted any inhibitory effect upon the growth of the staphylococcus.

*Investigation of the agglutinating power exerted by the serum upon the staphylococcus.*—This was undertaken by mixing together in capillary tubes equal volumes of a suspension of an agar culture of staphylococcus and serum in various dilutions. The observations were undertaken on three different samples of the patient's blood. On one occasion only was a sedimentation obtained, and this was obtained only in the two-fold dilution of the serum. The sera of four normal men were at the same time examined by the same method. Two of these showed an agglutination reaction in all dilutions up to a 16-fold dilution. The two others showed the reaction only in the two-, four-, and eight-fold dilutions.

*Preparation of the staphylococcus vaccine which was employed in the treatment of the patient.*—Nutrient broth was inoculated with a staphylococcus aureus which had been subcultured from one of the original cultures obtained from the patient. After cultivation for three weeks at a temperature of 37° C. the culture was sterilised by exposure for 20 minutes to a temperature of 65° C. An addition of 0·5 per cent. lysol was made to the sterilised culture. The toxicity of the vaccine was then tested on guinea-pigs. It was found that when the quantum of the vaccine inoculated corresponded to 2 per cent. of their body-weight a moderate amount of œdema and a certain amount of constitutional disturbance were produced.

*Details of the inoculations carried out upon the patient and resulting clinical symptoms.*—On Oct. 25th, 1900, the patient was inoculated subcutaneously in the flank with one cubic centimetre of the above vaccine. Twelve hours afterwards there was considerable headache, the patient's temperature stood at 100·6° F., and considerable redness and tenderness had developed at the site of inoculation. The symptoms had entirely passed off after the expiration of 36 hours. On Nov. 1st 1·5 cubic centimetres of the same vaccine were inoculated. The inoculation was followed by similar but somewhat less severe local and constitutional symptoms. On the 13th 1·5 cubic centimetres of the same vaccine were inoculated. Both the local reaction and the general reaction were very slight, the temperature not rising above 99·4° F.

### DATA OF BLOOD EXAMINATIONS INSTITUTED IN THE PERIOD SUPERVENING UPON INOCULATION.

*Investigation of the agglutinating power exerted by the serum upon the staphylococcus.*—A determination of the agglutinating power instituted subsequently to the second inoculation showed that the serum now agglutinated the staphylococcus in all dilutions up to a 16-fold dilution.

*Investigation of the growth-inhibiting power exerted upon the staphylococcus.*—An estimation carried out in the interval between the first and second inoculations showed that the serum had not acquired any power of inhibiting the growth of the staphylococcus.

The results of two successive estimations of the growth-inhibiting power instituted soon after the dates of the third inoculation are subjoined in tabular form (Table I).

TABLE I.—*Estimation of the Growth-inhibiting Power exerted upon the Staphylococcus Aureus by the Blood of Patient 1 soon after his Third Inoculation.*

| Date on which the blood was examined. | Number of colonies of staphylococcus which developed in the capillary tubes filled in each case with 5 c.mm. of a gelatin culture of staphylococcus (previously diluted 100,000-fold and 1,000,000-fold respectively with nutrient gelatin) and | | | | Number of colonies of staphylococcus which developed in control tubes filled in each case with 5 c.mm. of same dilution of gelatin culture and 5 c.mm. of sterile broth. | | |
|---|---|---|---|---|---|---|---|
| | 5 c.mm. of patient's serum. | 5 c.mm. of a 2-fold dilution of patient's serum. | 5 c.mm. of a 4-fold dilution of patient's serum. | 5 c.mm. of an 8-fold dilution of patient's serum. | Tube 1. | Tube 2. | Tube 3. |
| Nov. 14th, 1900. | 0 | 2 | 5 | 10 | 57 | 22 | 50 |
| ,, 19th ,, | 8 | 7 | 7 | 10 | 29 | 36 | 23 |
| Average ... ... | 4 | 4·5 | 6 | 10 | 36·1 | | |

Table II. shows the results of the estimations set forth above would seem to indicate that the blood of a patient in the period immediately subsequent to inoculation constituted a somewhat unfavourable medium for the development of the staphylococcus. The question as to whether any actual bactericidal action was exerted was unfortunately not determined.

*Clinical history of the patient subsequently to inoculation.*—From the date of the first inoculation in October, 1900, the patient's condition began to improve. With the exception of two small superficial boils which developed between the dates of the second and third inoculations and two further similar small boils which developed in the earlier part of 1901 the patient has been absolutely free from furunculosis. The sycosis, eczema, and the affection of the eyelids also began to mend from the date of the first inoculation; the two former had practically disappeared within a month from the beginning of the treatment. The ophthalmia tarsi lasted a little longer. His face is now, and has for a period of over 12 months been, absolutely clean and free from eruption.

*Data of blood examinations instituted more than a year after the date of the original inoculation.*—Recently the patient's blood has been examined by the method devised by my colleague, Major W. B. Leishman,* for measuring the phagocytic power of the blood in vitro. The results of these estimations are subjoined in tabular form (Table II.):—

TABLE II.—*Results of the Estimations of the Phagocytic Power of the Blood of Patient 1 instituted more than 12 Months after the Date of Inoculation.*

| Date on which the blood was tested. | Source and variety of staphylococcus employed. | Average number of staphylococci ingested by each polynuclear white blood corpuscle of the *control* blood. | Average number of staphylococci ingested by each polynuclear white blood corpuscle of the *patient's* blood. | Phagocytic ratio—i.e., the proportion in which the number of staphylococci ingested by polynuclear white blood corpuscles of the *control* blood stood to the number ingested by polynuclear white blood corpuscles of the *patient's* blood. |
|---|---|---|---|---|
| 1901. | | | | |
| Dec. 2nd. | Staphylococcus aureus subcultured from Patient 1. | 9·3 | 21·7 | 1 : 2·3 |
| ,, 15th. | Ditto. | 6·5 | 9·5 | 1 : 1·45 |
| ,, ,, | Staphylococcus albus subcultured from Patient 3. | 12·2 | 12·9 | 1 : 1·07 |
| 1902. | | | | |
| Jan. 23rd. | Ditto. | 32·8 | 35·7 | 1 : 1·07 |

The control blood employed in the three first-recorded estimations was derived from W. B. L.; in the last estimation it was derived from A. E. W.

It will be manifest that the capacity of the patients' white blood corpuscles for ingesting staphylococci—and more particularly for ingesting the variety of staphylococcus with which he had been inoculated—was in each case found to be greater than that of the white blood corpuscles of the normal blood used as a control. These observations—more especially when taken in association with the observations made in connexion with the cases recorded below—lend probability to the assumption that the patient's continued freedom from staphylococcus invasion is the result of the inoculations undertaken.

CASE 2.—The patient, an elderly maiden lady, presented

* Brit. Med. Jour., Jan. 11th, 1902.

herself for treatment on Sept. 28th, 1901. She stated that she had undergone a somewhat serious operation some 21 months previously. Since the date of that operation she had suffered from a succession of very painful deep-seated boils (a reference to her diary showed that the exact number of these had been 25). In addition she had constantly suffered from superficial boils and pimples which had made sitting uncomfortable. She complained also of a pustular discharge occurring intermittently from her nose and ears. The patient was for the moment free from deep-seated boils. A sample of blood was withdrawn for examination and the patient was inoculated with 0·75 cubic centimetre of staphylococcus vaccine.[9]

### DATA OF THE BLOOD EXAMINATIONS UNDERTAKEN BEFORE INOCULATION.

*Estimation of the inhibitory power exerted by the serum on the growth of staphylococcus.*—For the purposes of this estimation a 24-hour old broth cultivation of the staphylococcus aureus was diluted[10] with liquefied nutrient gelatin until a dilution of 1 in 1,000,000 had been arrived at. To a five-cubic-millimetre volume of this dilution was then added in each case an equal volume of (*a*) the patient's serum, (*b*) the patient's serum after this had been heated for 10 minutes to 60° C., (*c*) serum from a normal person, and (*d*) sterile nutrient broth. After these admixtures had been made the diluted culture was in each case drawn up into a capillary tube. Three such tubes were being filled in with each variety of admixture. The following table shows the numbers of colonies[11] which developed:—

TABLE III.—*Showing the Number of Staphylococcus Colonies which Developed in Capillary Tubes filled in with Five Cubic Millimetres of the Diluted Gelatin Culture of Staphylococcus mixed with Five Cubic Millimetres of Serum or Broth as Particularised in Column 1 below.*

| Admixtures which were made to the 1,000,000-fold dilution of staphylococcus culture. | Number of staphylococcus colonies which developed in each capillary tube. | | | |
|---|---|---|---|---|
| | Tube 1. | Tube 2. | Tube 3. | Average of three tubes. |
| Patient's serum ... ... | 10 | 15 | 10 | 11·2 |
| Patient's serum previously heated to 60° C. for 10 minutes ... ... | 9 | 6 | 20 | 11·2 |
| Normal serum ... ... | 11 | 13 | 11 | 11·1 |
| Sterile broth ... ... ... | 18 | 9 | 16 | 14·0 |

Here manifestly the same results are obtained as in the case of the estimations undertaken before inoculation in connexion with Patient 1 (*vide supra*). In other words, no indication was obtained of anything in the nature of an inhibitory effect being exerted upon the staphylococcus by either the control blood or the patient's blood. We shall see in connexion with the next cases that the difference between the blood of patients suffering from staphylococcus invasions and the blood of normal persons is to be sought elsewhere.

*Particulars with regard to the subsequent inoculations and resulting clinical symptoms.*—The first inoculation was followed by very little in the way of either local or constitutional symptoms. Two further inoculations, in each case with one cubic centimetre of the same vaccine, were undertaken within the next three weeks. As in the case of the first inoculation the symptoms were very slight.

### DATA OF BLOOD EXAMINATIONS UNDERTAKEN A WEEK AFTER THE THIRD INOCULATION.

*Estimation of the agglutination power exerted by the blood upon the staphylococcus.*—The patient's blood now gives a complete sedimentation in an eight-fold dilution. The results obtained with the control blood are, however, indefinite.

*Estimation of the bactericidal power.*—A 1,000,000-fold dilution of a 24-hour old broth culture of the staphylococcus having been made, six measured volumes of this were transferred to the surface of agar. In the first of the six agar tubes (inoculated with 25 cubic millimetres of the diluted culture) nine colonies of staphylococcus made their appearance. In the second and third tubes (inoculated in each case with 15 cubic millimetres) the number of colonies which developed were in each case six. In the fourth tube (inoculated with 10 cubic millimetres) two colonies made their appearance. The fifth and sixth tubes (inoculated in each case with five cubic millimetres) remained sterile. This gives an average of 3·07 colonies to each 10 cubic millimetres of the 1 in 1,000,000 dilution employed. Figuring this out we arrive at 307,000,000 as the number of staphylococci contained in a cubic centimetre of the undiluted culture.

The procedures connected with the enumeration of the culture having been completed, graduated dilutions of the original staphylococcus culture were made and were mixed in capillary tubes with the patient's serum and a normal serum respectively. In each case about five cubic millimetres of serum and diluted culture were employed. After an interval of 24 hours, during which the tubes were digested at 37° C., the capillary tubes were filled in[12] with sterile broth with a view of determining whether any bactericidal effect had been exerted. The results are subjoined:—

TABLE IV.—*Showing the Absence of Bactericidal Power in the Patient's Blood after these Inoculations.*

| Dilutions of the staphylococcus culture which were digested with the serum. | Results obtained on incubating the tubes after filling in with sterile broth. | |
|---|---|---|
| | Tubes containing the patient's serum. | Tubes containing normal serum. |
| 100-fold dilution. | Growth of staphylococcus. | Growth of staphylococcus. |
| 1000- ,, ,, | ,, ,, | ,, ,, |
| 10,000- ,, ,, | ,, ,, | ,, ,, |
| 100,000- ,, ,, | ,, ,, | ,, ,, |
| 1,000,000- ,, ,, | ,, ,, | ,, ,, |
| 10,000,000- ,, ,, | Tube remains sterile. | Tube accidentally contaminated. |

It will be manifest from these results set forth above that neither the normal serum nor the patient's serum exerted any bactericidal action upon the growth of the staphylococcus. Comparison with the result of the enumeration shows that five cubic millimetres of either serum failed to kill 1·5 staphylococci.

*Particulars with regard to the patient's condition after inoculation and estimations of the phagocytic power of the blood.*—The patient recorded that she felt herself better within 24 hours after the first inoculation. For the first time for months she could sit with ease. There was also a complete cessation of the purulent discharge from the nose

TABLE V.—*Showing the Phagocytic Power of Patient Two Months after Inoculation.*

| Variety of staphylococcus which was employed. | Average number of staphylococci ingested by each polynuclear white-blood corpuscle of *normal* blood. | Average number of staphylococci ingested by each polynuclear white-blood corpuscle of the *patient's* blood. | Phagocytic ratio—i.e., the proportion in which the number of staphylococci ingested by *normal* blood stands to the number of staphylococci ingested by the polynuclear white-blood corpuscles of the *patient's* blood. |
|---|---|---|---|
| Staphylococcus aureus subcultured from Patient 1 ... ... | 25·7 | 10·6 | 1 : 0·41 |
| Staphylococcus albus subcultured from Patient 3 ... ... | 39·3 | 21·6 | 1 : 0·55 |

[9] This vaccine was a suspension in normal salt solution of a 24-hour-old culture of the staphylococcus aureus subcultured from Patient 1. The suspension was sterilised at 65° C. The quantum injected corresponded to the quantum of culture which was obtained from 0·75 square centimetre of agar surface.

[10] The dilutions were made with the diluting pipette figured by me in THE LANCET of June 1st, 1901, p. 1532.

[11] The colonies were counted under the microscope by the technique described in THE LANCET of Dec. 1st, 1900, p. 1566.

[12] The technique that was employed was that described by me in THE LANCET of June 1st, 1901, p. 1532.

and the ear. The general health also is said to have markedly improved and the patient was able to go about and to enjoy life. Two months from the date of the first inoculation the patient presented herself for examination. She had not had any recurrence of the boils but had been troubled by a few irritable pimples on the hands. A sample of blood having been withdrawn from the finger an estimation of the phagocytic power of the blood was undertaken. The results of the estimation are subjoined (Table V.).

In view of the result of this estimation the patient was warned that a recurrence of the boils must probably be anticipated. After a free interval of three and a half months the patient early in January, 1902, developed a deep-seated boil. This last ran a similar course and was attended by as much pain as the deep-seated boils which had occurred before the date of inoculation. The patient was seen again on Jan. 28th, 1902. Her condition was then quite satisfactory, but she still suffered from occasional irritable pimples. An estimation of the phagocytic power of the blood carried out at room temperature gave the following results: average number of staphylococci ingested by a white blood corpuscle of a normal blood,[13] 4·6; average number ingested by a white blood corpuscle of the patient's blood, 3·5. The proportion of staphylococci ingested by normal blood to staphylococci ingested by patient's blood was thus 1 : 0·75.

On March 17th the patient reported that she had no recurrence of the boils and that she was no longer troubled with pimples.

CASE 3.—The patient, a medical man, about 30 years of age, presented himself for treatment on Dec. 6th, 1901. He had suffered continuously for the previous 12 months from small but very irritable pustular pimples and superficial boils on the back of the neck. He was still suffering in this way. A cultivation made from one of his boils yielded a pure cultivation of staphylococcus albus.

### DATA OF BLOOD EXAMINATIONS INSTITUTED BEFORE INOCULATION.

A count of the different varieties of white blood corpuscles showed that the relative numbers were as follows: eosinophil, 1 per cent.; polynuclear, 53 per cent.; basophile, 1 per cent.; and large mononuclear and lymphocytes, 45 per cent. In an estimation of the phagocytic power of the blood the following results were obtained:—

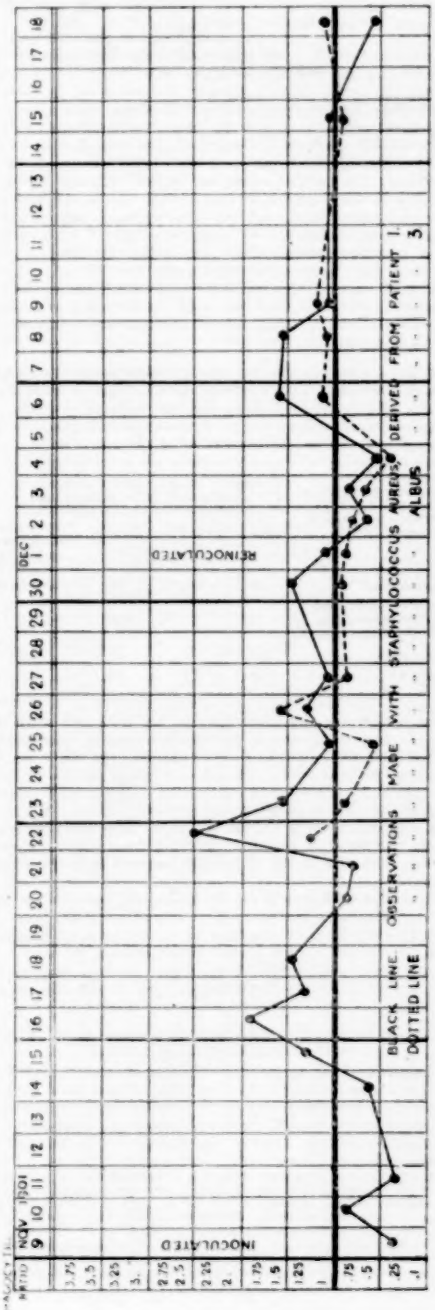
TABLE VI.—*Estimation of the Phagocytic Power of the Blood of the Patient in Case 3 anterior to Inoculation.*

| — | Average number of staphylococci ingested by each polynuclear white blood corpuscle of the *control* blood. | Average number of staphylococci ingested by each polynuclear white blood corpuscle of the *patient's* blood. | Phagocytic ratio—i.e., the proportion in which the number of staphylococci ingested by each white blood corpuscle of *normal* blood stood to the number of staphylococci ingested by each white blood corpuscle of the *patient's* blood. |
|---|---|---|---|
| First estimation ... | 18·6 | 6·5 | 1 : 0·39 |
| Second estimation ... | 21·0 | 8·0 | 1 : 0·38 |

It will be seen that the phagocytic power of the patient's white blood corpuscles was between two and three times less than the phagocytic power of the white blood corpuscles of a normal blood.

*Particulars of the inoculations which were carried out and the clinical symptoms resulting from these.*—On Nov. 11th, 1901, the patient was inoculated with one cubic centimetre of the same staphylococcus vaccine which was employed in Case 2 (*supra*). The symptoms at the site of inoculation were comparatively trifling; the patient, however, felt a little out of sorts for two days. On Dec. 1st the patient was inoculated with 0·75 cubic centimetres of a staphylococcus vaccine prepared from agar cultures of the staphylococcus albus subcultured from himself. This quantum of vaccine represented the quantum of culture which developed on 1·5 square centimetres of agar surface. Marked local reaction was produced at the site of inoculation. The constitutional reaction was only very slight.

*Particulars with regard to the effects produced upon the blood and upon the localised staphylococcus invasion.*—The effects exerted upon the condition of the neck and the concurrent changes in the blood are set forth below with some detail in parallel columns (Table VII.). The results of the blood examination are also presented in a synoptical manner in the form of a graphic curve (Curve 1).


INOCULATED
REINOCULATED
BLACK LINE: OBSERVATIONS MADE WITH STAPHYLOCOCCUS AUREUS ALBUS DERIVED FROM PATIENT 3.
DOTTED LINE:

CURVE 1 (relating to Patient 3).

The curve expresses the phagocytic ratio of the patient's blood (as estimated by Leishman's method), the phagocytic power of the control blood being everywhere taken as 1.

[13] This blood was derived from A. E. W.

TABLE VII.—SETTING FORTH IN CONNEXION WITH CASE 3 (*a*) THE PHAGOCYTIC POWER OF THE PATIENT'S BLOOD; (*b*) THE DETAILS OF THE TREATMENT ADOPTED; AND (*c*) PARTICULARS WITH REGARD TO THE PATIENT'S CLINICAL CONDITION.

| Date. | Variety of staphylococcus employed in testing the blood. | Phagocytic ratio—i.e., the proportion in which the number of staphylococci ingested by each polynuclear leucocyte of the *control* blood stood to the number of staphylococci ingested by each of the *patient's* polynuclear leucocytes. | Brief notes regarding the localised staphylococcus invasion and the general condition of the patient. |
|---|---|---|---|
| 1901. | | | |
| Nov. 9th. | Staphylococcus aureus from the patient in Case 1. | 1* : 0·39 | For description of clinical condition *vide* text (*supra*). |
| Inoculated in the flank with 1 c.c. of staphylococcus vaccine prepared with staphylococcus aureus subcultured from the patient in Case 1. | | | |
| Nov. 10th. | Staphylococcus aureus from the patient in Case 1. | 1† : 0·92 | Very slight local or constitutional disturbance. Condition of the neck unaltered. |
| ,, 11th. | ,, | 1† : 0·3 | Marked improvement in the pustular pimples on the neck. |
| ,, 14th. | ,, | 1† : 0·6 | The boils practically gone. The patient felt better. |
| ,, 15th. | ,, | 1† : 1·35 | No return of the boils. |
| ,, 16th. | ,, | 1† : 1·96 | ,, ,, ,, ,, |
| ,, 17th. | ,, | 1‡ : 1·25 | ,, ,, ,, ,, |
| ,, 18th. | ,, | 1† : 1·45 | ,, ,, ,, ,, |
| ,, 20th. | ,, | 1† : 0·88 | A fresh development of small boils on the neck. |
| ,, 21st. | ,, | 1 : 0·85 | The boils are drying up. |
| ,, 22nd. | ,, | 1 : 2·6 | One small fresh boil; the others improving. |
| | Staphylococcus albus from the patient in Case 3. | 1 : 1·35 | |
| ,, 23rd. | Staphylococcus aureus from the patient in Case 1. | 1 : 1·6 | No new boils, all the old ones have dried up. |
| | Staphylococcus albus from the patient in Case 3. | 1 : 0·9 | |
| ,, 25th. | Staphylococcus aureus from the patient in Case 1. | 1 : 1·1 | No return of the boils. |
| | Staphylococcus albus from the patient in Case 3. | 1 : 0·52 | |
| ,, 26th. | Staphylococcus aureus from the patient in Case 1. | 1 : 1·3 | No new boils, but some irritation round one of the old ones. |
| | Staphylococcus albus from the patient in Case 3. | 1 : 1·6 | |
| ,, 27th. | Staphylococcus aureus from the patient in Case 1. | 1 : 1·05 | No fresh boils. |
| | Staphylococcus albus from the patient in Case 3. | 1 : 1 | |
| ,, 30th. | Staphylococcus aureus from the patient in Case 1. | 1 : 1·5 | No fresh boils, but there is still some infiltration of the neck. |
| | Staphylococcus albus from the patient in Case 3. | 1 : 1 | |
| Dec. 1st. | Staphylococcus aureus from the patient in Case 1. | 1 : 1·5 | A small boil has developed on the right side of the neck. |
| | Staphylococcus albus from the patient in Case 3. | 1 : 0·97 | |
| Inoculated in the flank with 0·75 cubic centimetre of a vaccine prepared from his own staphylococcus albus. The quantity inoculated represents the quantum of culture obtained from 1·5 square centimetres of agar surface. | | | |
| Dec. 2nd. | Staphylococcus aureus from the patient in Case 1. | 1 : 0·67 | Marked local reaction at the site of inoculation. Slight constitutional disturbance. |
| | Staphylococcus albus from the patient in Case 3. | 1 : 0·75 | |
| ,, 3rd. | Staphylococcus aureus from the patient in Case 1. | 1 : 0·94 | Local reaction at site of inoculation subsiding. |
| | Staphylococcus albus from the patient in Case 3. | 1 : 0·66 | |
| ,, 4th. | Staphylococcus aureus from the patient in Case 1. | 1 : 0·53 | Still some pain at site of inoculation. A painful boil has developed on the neck. This is the first painful boil since the patient came under treatment. |
| | Staphylococcus albus from the patient in Case 3. | 1 : 0·47 | |
| ,, 6th. | Staphylococcus aureus from the patient in Case 1. | 1 : 1·65 | The boil which developed on Dec. 4th is much better |
| | Staphylococcus albus from the patient in Case 3. | 1 : 1·1 | |
| ,, 8th. | Staphylococcus aureus from the patient in Case 1. | 1 : 1·52 | Two or three small but somewhat pustular pimples have developed. |
| | Staphylococcus albus from the patient in Case 3. | 1 : 1 | |
| ,, 9th. | Staphylococcus aureus from the patient in Case 1. | 1 : 1·1 | A few fresh small pimples on the neck. |
| | Staphylococcus albus from the patient in Case 3. | 1 : 1·15 | |
| ,, 15th. | Staphylococcus aureus from the patient in Case 1. | 1 : 1·05 | The patient has been free from boils for some days past. Infiltration of the neck has been steadily diminishing. |
| | Staphylococcus albus from the patient in Case 3. | 1 : 1·05 | |
| ,, 18th. | Staphylococcus aureus from the patient in Case 1. | 1 : 0·54 | Some fresh pimples have developed. |
| | Staphylococcus albus from the patient in Case 3. | 1 : 1·1 | |
| ,, 27th. | Staphylococcus aureus from the patient in Case 4. | 1§ : 3·9 | All infiltration has disappeared. Except for the presence of slight congestion the skin is absolutely normal. |
| 1902. | | | |
| Jan. 3rd. | Staphylococcus albus from the patient in Case 3. | 1 : 1·2 | The patient has been free from boils for some little time. His neck is perfectly smooth and clean. The patient is now proceeding to South Africa. |

* In this and all subsequent estimations unless where otherwise specified the control blood employed was derived from W. B. L.
† The control blood used in this estimation was derived from F. N. W. [bloods were in the closest agreement.
‡ Three normal bloods, those of W. B. L., F. N. W., and X. A., were here employed as controls. The results obtained in the case of these
§ The blood here employed was derived from A. E. W. It is a blood which possesses a low phagocytic power.

The curve expresses the phagocytic ratio of the patient's blood (as estimated by Leishman's method), the phagocytic power of the control blood being everywhere taken as 1.

Three important points are clearly brought out by the observations made upon the patient. 1. The first of these points is that changes in the phagocytic power of the blood in the form of a negative phase of diminished phagocytic power succeeded by a positive phase of increased phagocytic power follow upon a staphylococcus inoculation. The negative and positive phases here obtained are plainly precisely analogous to the negative and positive phases of bactericidal power which I have shown to supervene upon an anti-typhoid inoculation. They are analogous also to the negative and positive phases which Ehrlich and Madsen have shown to supervene upon the inoculation of tetanus and diphtheria toxin respectively. 2. The second and equally important point which is brought out by the comparison of the clinical record with the results of the blood examination is that the negative and positive phases of phagocytic power stand in the very closest relation to the resisting power of the organism. So close and intimate does that association appear to be that it was, in this and the subsequent cases, always easy from the consideration of the local appearances to anticipate the results of the phagocytic estimation. 3. The general result of the blood examinations is in entire accordance with the theory of immunity put forward by Metchnikoff.

CASE 4.—The patient, aged 21 years, a medical student, presented himself for treatment on Dec. 20th, 1901. For the previous two months he had been suffering from boils chiefly on the nape of the neck, but also on the shoulder and forearm. Immediately anterior to the commencement of the boils the patient had suffered from an attack of influenza. The nape of the neck was seen to be the seat of a localised inflammatory process, the surface being occupied by three or four angry pimply boils, while the deeper tissues were considerably infiltrated and tumefied. The glands on both sides of the neck were somewhat swollen. On the cheek, in the neighbourhood of the nose, there were a certain number of very prominent spots of pustular acne. A cultivation made from one of the pustular pimples on the back of the neck yielded a pure cultivation of the staphylococcus aureus.

*Particulars of the inoculations undertaken, of the resulting symptoms and blood changes, and of the effect produced on the localised staphylococcus invasion.*—The course of treatment pursued and the effects which resulted from that treatment will perhaps be best gathered from a consideration of the subjoined tabular statement (Table VIII.).

The general deductions which can be drawn from a consideration of this case are precisely the same as those drawn from a consideration of Case 3. The absence of a negative phase in this particular case is no doubt to be imputed to the fact that very small doses of staphylococcus vaccine were employed. Interesting as bearing on the association between the changes in the phagocytic power of the blood and the changes in the condition of the patient are (1) the rapidity with which the therapeutic result was achieved taken in connexion with the rapid increase in the phagocytic power of the blood, and (2) the coincidence of the development of the pustular pimple on Jan. 3rd with the result of the blood examination instituted on that day. A further and very interesting feature which arrests attention in connexion with this case is the fact that the first inoculation was followed by considerable inflammatory swelling at the seat of infection. This phenomenon, which, as we shall see, made its appearance again in a very marked manner in connexion with Case 5, is a phenomenon which would seem to be precisely analogous to the local inflammatory reaction which is obtained after the injection of tubercle vaccine (Koch's tuberculin). It will be noticed in this connexion that no inflammatory reaction supervened upon the second inoculation, and generally that nothing of this kind has come under notice in connexion with inoculations undertaken upon patients whose tissues were presumably at the date of inoculation free, or comparatively free, from staphylococcus.

CASE 5.—The patient, a private soldier, invalided home from Rawal Pindi for intractable sycosis, was first seen on Dec. 24th, 1901. The patient gave the following history. In 1893 he developed a little sore on the scalp which was followed by a general eruption all over the scalp and face. He was admitted to, and remained under

TABLE VIII.—SETTING FORTH IN CONNEXION WITH CASE 4 (*a*) THE PHAGOCYTIC POWER OF THE PATIENT'S BLOOD; (*b*) THE DETAILS OF THE TREATMENT ADOPTED; AND (*c*) PARTICULARS WITH REGARD TO THE CLINICAL CONDITION OF THE PATIENT.

| Date. | Variety of staphylococcus employed in the test. | Phagocytic ratio—i.e., the proportion which the number of staphylococci ingested by white blood corpuscles of *control* blood bore to number of staphylococci ingested by *patient's* blood. | Brief notes regarding the conditions of the localised staphylococcus invasion and the general condition of the patient. |
|---|---|---|---|
| 1901. | | | |
| Dec. 20th | Staphylococcus albus from the patient in Case 3. | 1*: 0·78 | Condition as described in the text (*supra*). |
| Inoculated with 0·3 cubic centimetre of a staphylococcus vaccine prepared from agar cultures of staphylococcus albus subcultured from the patient in Case 3. The quantum inoculated corresponds to the quantum of culture which developed on 0·6 square centimetre of agar surface. | | | |
| Dec. 21st | Staphylococcus albus from the patient in Case 3. | 1 : 2 | There has been very little local reaction at the site of inoculation and only slight constitutional disturbance. Considerable swelling has, however, developed in the neck. Signs of improvement in the fact that the superficial boils have lost their angry look. There is considerable polynuclear leucocytosis. |
| | Staphylococcus aureus derived from the patient himself. | 1 : 3·8 | |
| ,, 24th | Staphylococcus aureus from the patient himself. | 1† : 6·48 | The patient reports that there has been very considerable inflammatory swelling of the neck and of the lymphatic glands. The swelling has now almost subsided. The boils have entirely disappeared and the leucocytosis has passed off. |
| Inoculated with 0·5 cubic centimetre of a vaccine prepared from agar culture of the patient's own staphylococcus aureus. The quantum inoculated corresponds to the quantum of culture which developed in 0·5 square centimetre of agar surface. | | | |
| Dec. 27th | Staphylococcus aureus from the patient himself. | 1 : 2 | No constitutional reaction. Congestion and tenderness for 48 hours at the seat of inoculation. No further swelling of the glands or inflammatory reaction in the neck. The patient is quite free from boils and acne. There is some leucocytosis. |
| 1902. | | | |
| Jan. 3rd | ,, | 1 : 1 | One small inflamed pimple has developed on the neck. The patient otherwise is quite well and there is no leucocytosis. |
| ,, 10th | Staphylococcus albus from the patient in Case 3. | 1 2/3 : 0·95 | The neck is perfectly well. No trace remains of boils, acne, or swollen glands. |
| ,, 17th | — | — | The patient, who is leaving the neighbourhood, reports himself as being perfectly well. A similar report was received on March 15th, 1902. |

* The control blood employed in this and the five following estimations was derived from A. E. W.

† This result may conceivably have been due to some error of technique or to some incidental lowering of the phagocytic power of the control blood. Vide in this connexion the remarks appended to Table IX. and Curve 2.

‡ The control blood here employed was derived from W. B. L. The phagocytic power of this blood has invariably been found to be higher than that of A. E. W.'s blood.

TABLE IX.—SETTING FORTH IN CONNEXION WITH CASE 5 (*a*) THE PHAGOCYTIC POWER OF THE BLOOD; (*b*) DETAILS WITH REGARD TO THE TREATMENT ADOPTED; AND (*c*) PARTICULARS WITH REGARD TO THE CLINICAL CONDITION.

| Date. | Variety of staphylococcus employed in testing the blood. | Phagocytic ratio—i.e., proportion which the number of staphylococci ingested by the white blood corpuscles of the *control* blood bore to the number of staphylococci ingested by the white corpuscles of the *patient's* blood. | Brief notes regarding the condition of the localised staphylococcus invasion and the general condition of the patient. |
|---|---|---|---|
| 1901. | | | |
| Dec. 24th. | Staphylococcus aureus from the patient in Case 4. | 1* : 3·3 | For description of condition see text *supra*. |
| | Inoculated in the flank with 0·5 cubic centimetre of vaccine prepared from agar cultivations of staphylococcus aureus subcultured from the patient in Case 4. The quantum inoculated corresponded to the amount of culture which developed in 0·5 square centimetre of agar surface. | | |
| ,, 25th. | Staphylococcus aureus from the patient in Case 4. | 1* : 0·16 | Great swelling and inflammatory congestion over the whole affected area of the face, the neck, and the scalp. Considerable leucocytosis. |
| ,, 26th. | ,, | 1* : 0·34 | Still some swelling. A sensible decrease in the pustular points and on the cheeks and the chin. |
| ,, 27th. | ,, | 1* : 2·7 | The inflammatory reaction has subsided. All the pustular points have disappeared. Polynuclears 50 per cent. |
| ,, 28th. | ,, | 1* : 1·3 | The face is much better. The eyelids are no longer red. No further development of the pustular points. |
| | Inoculated in the flank with 0·5 cubic centimetre of the same staphylococcus vaccine. | | |
| ,, 29th. | Staphylococcus aureus from the patient in Case 4. | 1* : 0·88 | Renewed swelling and congestion of the face. A few pustular points on the chin. Marked improvement everywhere. |
| ,, 30th. | ,, | 1* : 1·94 | Congestion less. Four or five pustular points on the chin. |
| 1902. | | | |
| Jan. 2nd. | ,, | 1* : 0·94 | Complains of more soreness and swelling. The face more congested and a new crop of pustular points and more serous weeping. |
| ,, 3rd. | Staphylococcus albus from the patient in Case 3. | 1* : 1·0 | No change noted except a slight diminution in the swelling. |
| ,, 6th. | ,, | 1† : 0·55 | The chin is very angry looking; more pustular points and weeping. |
| ,, 7th. | ,, | 1† : 0·61 | The face is less angry. |
| | Inoculated with 0·5 cubic centimetre of vaccine prepared from agar cultivations of the patient's staphylococcus aureus. | | |
| ,, 8th. | Staphylococcus albus from the patient in Case 3. | 1† : 1·66 | Considerable inflammatory congestion of the chin, subparotid region, eyelids, and temples. The general appearance is almost erysipelatous. |
| ,, 9th. | ,, | 1* : 2·0 | Swelling and infiltration much diminished. The bony contours of the chin and the angle of the jaw have become clearly visible. |
| ,, 10th. | ,, | 1† : 0·86 | The face and the chin are rather more inflamed. Had a bad night. Swelling round the glands below the angle of the chin. |
| ,, 11th. | ,, | 1† : 1·74 | Marked improvement everywhere. The swathings and moist boric dressings are now discarded, and the face is powdered with chalk. |
| ,, 12th. | ,, | 1† : 1·46 | Infiltration everywhere much diminished. |
| ,, 14th. | ,, | 1† : 1·55 | No change. The crusts which still cover the chin are removed by steeping in normal salt solution. |
| ,, 16th. | ,, | 1† : 0·8 | Increased congestion with weeping and scabbing. No pustulation. |
| | Inoculated with one cubic centimetre of the same staphylococcus vaccine. | | |
| ,, 17th. | Staphylococcus albus from the patient in Case 3. | 1† : 1·35 | A red blush has appeared over the whole of the affected area. There is no noticeable swelling. The chin is thickly encrusted with scabs. |
| ,, 18th. | ,, | 1† : 1·73 | No change. The crusts were removed by steeping in normal salt solution. |
| ,, 19th. | ,, | 1† : 1·18 | Great improvement; appearance of healthy cicatrisation over the area of the chin. |
| ,, 20th. | ,, | 1† : 1·6 | The cheeks are better, but there is an increased serous discharge on the skin. |
| | Inoculated with two cubic centimetres of the same staphylococcus vaccine. | | |
| ,, 21st. | Staphylococcus albus from the patient in Case 3. | 1† : 0·6 | Inflammatory reaction, swelling, and increased serous exudation. These symptoms are confined to the region of the chin. |
| ,, 22nd. | ,, | 1† : 1·3 | The face and the chin are very much better. Infiltration has largely disappeared and the skin looks delicate and soft. It is of a pink colour over the whole of the previously affected area. A single small gland can be felt under the angle of the left jaw. There is still a little weeping over the surface of the chin and there are some crusts in the scalp above and behind the ear. |
| ,, 23rd. | ,, | 1† : 1·3 | The improvement is maintained. |
| ,, 24th. | ,, | 1† : 1·3 | The surface of the chin is becoming normal. |
| ,, 25th. | A mixture of staphylococcus aureus and albus. | 1† : 1·85 | The patient is improving rapidly, the skin is everywhere soft and pliable and is less flushed. |
| ,, 30th. | ,, | 1† : 0·61 | About 10 new superficial pustular points have appeared on the chin; the pustular eruption over the temporal area is drying off. |
| | Inoculated with three cubic centimetres of staphylococcus vaccine. | | |

* The control blood employed in these estimations was derived from A. E. W.
† The control blood employed in these estimations was derived from W. B. L. It is a blood which possesses a high phagocytic power. Vide in connexion with results of phagocytic estimation on Dec. 24th, 1901, note † appended to Table VIII.

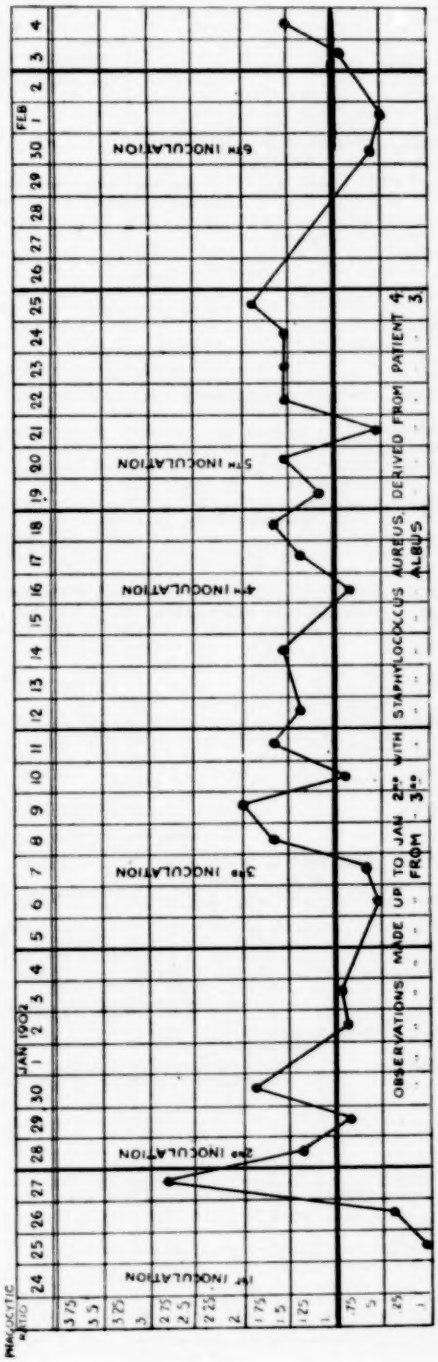
treatment in, the Camberwell Infirmary for six weeks and was then discharged "cured." When he enlisted in 1897 he had, however, still a minute patch of eruption in front of his left ear. After serving for six months he was admitted to hospital for a deep-seated boil in the left parotid region which developed in connexion with the uncured patch of eruption just spoken of. He remained under treatment for about a fortnight. In the same year he proceeded to India and remained well for a time. In 1899 he attended hospital or three months for sycosis and eczema of the face. He relapsed again in 1900 and spent nine weeks in hospital, afterwards attending as an out-patient. He was readmitted in 1901 and was invalided home after spending six or seven months in hospital under energetic treatment. The patient, whose face and head were entirely swathed in dressings, was suffering from a very aggravated form of sycosis complicated by eczema. The whole area of the chin, the cheeks, and the under surface of the jaw was extensively infiltrated and was thickly covered in places with moist scabs. A number of pustular points were interspersed between the prominences corresponding to the inflamed hair follicles. The bony contours of the jaw were almost obliterated by dense masses of infiltrated tissue. The scalp and in particular that portion of it overlying the squamous portion of the left temporal bone was the seat of a scabby sero-pustular affection corresponding to that described under the name of acne varioliformis. The eyebrows and the margins of the eyelids were the seat of a chronic pustular inflammation.

*Data of the microscopical and bacteriological examinations which were instituted.*—A careful examination of the hairs of the beard showed that these were not invaded by any parasitic mycelium. Cultivations made from the pustular points on the face yielded pure cultivations of the staphylococcus aureus.

*Details of the inoculations undertaken and of the effects of these upon the blood and the localised staphylococcus invasion.*—The particulars of the inoculation undertaken and of the effects produced on the blood and on the area invaded by the staphylococcus are subjoined with some detail in tabular form (Table IX.). The results of the blood examinations are given also in the form of a curve (Curve 2).

Attention may be drawn to the following points in connexion with the table and the curve. 1. The high expression obtained for the phagocytic power of the patient's blood in the case of the first estimation recorded in the table would seem to have been due either to an under estimation of the phagocytic power of the control blood due to an error in the technique or to some incidental lowering of the phagocytic power of that blood. There are thus in this case no trustworthy data relating to the phagocytic power of the patient's blood before inoculation. 2. It will be observed that, as in the cases already considered, an increase of phagocytic power was registered after each inoculation. 3. In the case of the first and second and again in the case of the fifth and sixth inoculations undertaken respectively with a double and a treble dose of the vaccine the positive phase was preceded by a negative phase of diminished phagocytic power. 4. The clinical record shows that a condition of diminished phagocytic power, whether produced by inoculation or occurring spontaneously, was in each case associated with aggravation of the local affection. 5. The clinical record further shows that a condition of increased phagocytic power was invariably associated with an inflammatory (phagocytic) reaction in the area invaded by the staphylococcus and with a subsequent improvement in the form of a restriction of the invaded area. 6. It would appear from the consideration of the present case, taken in association with the cases already considered, that where the scale is turned against the invading staphylococci, it is turned not by a change produced in the blood-fluids, but by a succession of immunising impulses, each such impulse expressing itself in an inflammatory (phagocytic) reaction localised in the invaded tissues.

The results of the continuation of the treatment up to March 15th have confirmed the premonitions of a proneness to relapse which may be gathered from the previous history as well as from the results of the blood examinations and clinical data incorporated in the table and curve. In each case, after an improvement extending over three or four days subsequently to inoculation, symptoms of a certain amount of relapse have manifested themselves both in the condition of the local infection and in the results of the blood examinations. At present, after 10 further staphylococcus inoculations which have been timed, and varied with respect to dose, in accordance with the results of the daily blood examinations, the patient's condition is still that of a chronic staphylococcus invasion associated in places with a certain amount of scabbing and infiltration. There would thus appear to be a very definite limit to the defensive reaction of the organism, a limit which comes into consideration also in the case of other inoculations.




CURVE 2 (relating to Patient 5).

The curve expresses the phagocytic ratio of the patient's blood, the phagocytic power of the control blood being everywhere taken as 1.

CASE 6.—The patient, a man, about 40 years of age, was first seen on Feb. 18th, 1902. A fortnight previously he began to suffer from an acute inflammation of the hair follicles associated with a considerable amount of serous discharge and itching. The inflammatory process now occupies the whole area of the beard and hairy portion of the cheeks, and it has spread backwards and has affected the nape of the neck and the lower portion of the back of the scalp. The whole of the affected area is thickly occupied by discrete, for the most part dry, scabs conforming to the type of acne varioliformis. Associated with these there is in places a certain amount of serous discharge. The scalp generally is extremely scurfy. Cultivations made from the surfaces exposed by removal of the scabs yielded a pure cultivation of staphylococcus aureus. The particulars of the treatment and details as to the result obtained are subjoined in Table X.

TABLE X.—SETTING FORTH IN CONNEXION WITH CASE 6 (*a*) THE PHAGOCYTIC POWER OF THE PATIENT'S BLOOD; (*b*) THE DETAILS OF THE TREATMENT ADOPTED; AND (*c*) PARTICULARS WITH REGARD TO THE PATIENT'S CLINICAL CONDITION.

| Date. | Variety of staphylococcus employed in testing the blood. | Phagocytic ratio—i.e., the proportion which the number of staphylococci ingested by the leucocytes of the *control* blood bore to the number of staphylococci ingested by leucocytes of the *patient's* blood. | Brief notes regarding the conditions of the localised staphylococcus invasion and the general condition of the patient. |
|---|---|---|---|
| 1902. | | | |
| Feb. 18th. | Staphylococcus albus subcultured from the patient in Case 3. | 1* : 0·74 | Condition as described in the text (*supra*). |
| ,, 19th. | ,, | 1* : 0·7 | Condition unchanged. |
| Inoculated in the flank with one cubic centimetre of a mixed staphylococcus vaccine. The quantum inoculated corresponds to the quantum of albus and aureus culture which developed on one square centimetre of agar surface. | | | |
| Feb. 20th. | Staphylococcus albus as above. | 1* : 1·24 | The patient had a mild general and local reaction. The condition of the chin and the cheeks is greatly improved, there being much less congestion and a small amount of discharge. |
| ,, 21st. | — | — | The condition of the chin, the face, and the scalp is very considerably improved. |
| ,, 22nd. | Staphylococcus albus as above. | 1† : 0·87 | Further marked improvement, the back of the head and of the chin having become practically clear. Small moist patches still to be seen in front of the ear and at the angle of the mouth. |
| Re-inoculated with one cubic centimetre of the same vaccine. | | | |
| Feb. 23rd. | Staphylococcus albus as before. | 1† : 0·36 | The moist patch in front of the ear has dried up. The patient is quite well with the exception of a small patch at the angle of the mouth. |
| ,, 24th. | ,, | 1† : 0·36 | Practically well. |
| ,, 25th. | ,, | 1* : 0·7 | Discharged. |

* The control blood employed was that of W. B. L.
† The control blood employed was that of W. G. L.

It will be noted on study of the above table that there was a marked increase in the phagocytic power of the patient's blood on the day succeeding the inoculation. On this and the next two days the clinical condition improved in an astonishing manner. The phenomena which succeeded upon reinoculation are of less conspicuous interest. It will be seen that after the second inoculation, which was resorted to with a view to checking the falling away of the phagocytic power which manifested itself on the third day after the first inoculation, a pronounced negative phase of diminished phagocytic power came under observation. This negative phase, presumably owing to the fact that the invading bacteria had already been disposed of, was unaccompanied by anything in the nature of an aggravation of the patient's symptoms. At the date of the patient's discharge the negative phase was apparently giving place to a positive phase of increased phagocytic power.

## CONSIDERATIONS IN CONNEXION WITH THE POSSIBLE PROPHYLACTIC AND THERAPEUTIC APPLICATIONS OF ANTI-STAPHYLOCOCCUS VACCINE.

Having in the foregoing considered the results obtained by the inoculation of staphylococcus vaccine into patients affected with furunculosis, sycosis, and acne, we may naturally be led on to inquire whether there are any other forms of staphylococcus invasion in connexion with which these inoculations might perhaps find a useful application.

*Possible prophylactic applications.*—Dealing first with the question of a possible application of these vaccines in connexion with the prophylaxis of septic invasion, it would seem that advantage might possibly be derived from their application in connexion with compound fractures and further in connexion with operative procedures, such as those associated with the upper jaw and air passages, where it is impossible to secure the asepticity of the wound. It is, perhaps, venturesome to suggest that there might also be other cases where the surgeon might be willing in his operative procedures to avail himself of the increased resistance to staphylococcus invasion which would, it can hardly be doubted, be obtained by a prophylactic inoculation of staphylococcus vaccine. I would urge in defence of this suggestion that the adoption of measures designed to increase the resistance of the organism to septic invasion would seem to be only a legitimate development of the accepted practice of relying upon the protective agencies of the organism instead of upon the application of antiseptics for the destruction of such septic bacteria as may upon occasion in spite of aseptic precautions obtain access to wounds.

Apart from actual surgical procedures it would seem possible that prophylactic inoculation of staphylococcus vaccine might find a scientifically interesting and conceivably a practically useful application in connexion with anti-small-pox vaccination. In view of the apparently septic character of the inflammation which is frequently associated with vaccination wounds and the fact that staphylococci are constantly present in vaccine lymph even in glycerinised lymph I take it that it would be desirable to determine how far the staphylococcus is responsible for the symptoms which have done so much to discredit vaccination in the popular mind. The information which is required could probably be obtained by noting the effects produced by the inoculation of one and the same variety of vaccine lymph into persons or animals immunised against the staphylococcus and into persons or animals not so protected. I shall be glad to place a supply of staphylococcus vaccine at the disposal of any medical man possessing facilities for undertaking such inquiry.

Comparatively little remains to be added to what has already come under consideration in connexion with the therapeutic employment of staphylococcus vaccine. It is possible that the vaccine might find a useful application, not only in connexion with the treatment of furunculosis, acne, and sycosis, but also in connexion with the treatment of Veldt sores, old ulcers, sinuses, and septic vaccination wounds.

### CONCLUDING REMARKS.

*Possibility of a still wider extension of the treatment of localised inflammatory conditions by inoculation.*—We may inquire, in conclusion, into the prospects of successfully exploiting bacterial vaccines in the treatment of localised inflammatory processes produced by pathogenic micro-organisms other than the staphylococcus. Much that is of value can be learned upon this subject by a careful consideration of Koch's tuberculin inoculations and by a comparison of these with the inoculations of staphylococcus vaccine with which we have been dealing above. In each case a bacterial vaccine is, for therapeutic purposes, inoculated into patients already the subject of a corresponding infection. In each case, as the result of the inoculation, an acute inflammatory reaction is set up at the seat of infection. In each case, again as a result of the inflammatory reaction in question, the nidus in which the bacteria are lodged is broken up.

At this point an all-important difference emerges. In the case where the localised inflammation process is due to a staphylococcus infection the breaking up of the nidus has involved, so far as has hitherto appeared, a destruction of the bacteria which have been fluttered. In the case of a tubercle infection the destruction of the nidus has, on the other hand, been shown to be compatible with the continued survival of the tubercle bacilli. Judging by the event recorded in connexion with many tuberculin inoculations, the tubercle bacilli when set free by the inflammatory reaction would appear to have been merely carried away by the white blood corpuscles or lymph current to give origin to new localised foci of infection, or, in exceptional cases, to a generalised form of tuberculosis.

When we consider what may be the reason of this difference in the event which has followed the inoculation of these two different bacterial vaccines we realise that it must be attributed primarily to the fact that the tubercle bacillus possesses, as compared with the staphylococcus, an infinitely greater capacity for maintaining its vitality in the interior of the organism.

A further reason for the difference in event we may perhaps find in the fact that while it was possible in the case of the staphylococcus inoculations described above to graduate the doses and time the injections in accordance with the data supplied by the measurement of the patient's resistance (as judged by his phagocytic reaction and by the condition of the invaded tissues) it was impracticable to do this—although it was infinitely more important to do so—in the case of Koch's inoculations of tubercle vaccine. We are thus by a comparison of the inoculations undertaken with staphylococcus vaccine with those undertaken with Koch's tuberculin again led back to the cardinal principle that we must, in connexion with every therapeutic application of a bacterial vaccine, consider, on the one hand, the capacity of resistance with which the particular species of invading micro-organism is endowed, and, on the other hand, the capacity of resistance possessed by the particular patient at the time of inoculation.

The ideal to be kept in view must everywhere be so to graduate the doses of the bacterial vaccine and so to time the injections as to leave to the infected patient in any negative phase which may supervene after inoculation a sufficient margin of resistance to safeguard him against any generalisation of his infection.

In connexion with the possibility of a wider extension of the principle of therapeutic inoculation we may with advantage keep in view (1) the consideration that patients who have been suffering from long-continued localised inflammation processes would seem, so far as can be judged from clinical experience, to have acquired a defensive power such as suffices to ward off the more generalised forms of their particular infections; and (2) the consideration that where bacterial invasions manifest themselves only under the form of "surface-invasions" the conditions in the interior of the organism must be assumed to be *ab initio* hostile to the growth of the invading micro-organisms.

These considerations would seem to point to the desirability of testing the effect of therapeutic inoculations of sterilised streptococcus cultures in the case of patients who are the subject of indolent and relapsing forms of erysipelas. In applying an inoculation treatment to the forms of erysipelas referred to it would of course be necessary to keep in view the fact that the streptococcus possesses, as compared with the staphylococcus, a much greater capacity for generalising itself in the organism.

The above considerations would also seem to point to the desirability of determining whether any therapeutic advantage could be derived from the inoculation of the appropriate bacterial vaccines into patients suffering from chronic "surface-invasions." There would be opportunity of applying such inoculations in connexion with the treatment of bronchitis, ozæna, gleet, leucorrhœa, and those forms of the bacteriuria[14] which depend upon a bacterial invasion of the mucous membranes of the genito-urinary tract. It would of course be necessary in each case, after determining the particular species of invading micro-organism which was giving rise to trouble, to consider (1) the question of technique in connexion with the preparation of the vaccines; (2) the question as to whether the particular invading micro-organism possessed any power of generalising itself in the system; and (3) the question of the resisting and reacting power of the particular patient. In connexion with the estimation of these last, the methods of estimating the bactericidal power of the blood which have been described by myself[15] and the method of estimating the phagocytic power of the blood which has been described by Major Leishman[16] are, I think, capable of rendering services.

In bringing this communication to a close I desire to express my acknowledgements to Captain G. McIver C. Smith, I.M.S., for helpful collaboration in connexion with the study of Case 1. To my colleague, Major Leishman, R.A.M.C., I am indebted for manifold and unwearying assistance and valuable criticism throughout the whole course of this investigation.

Netley.

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## THE SURGERY OF NON-MALIGNANT GASTRIC ULCER AND PERFORATION.

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THE following notes are rather detailed. Experience of detail is exactly what I have felt the need of when commencing non-malignant gastric surgery. Some of the cases are of exceptional interest, otherwise they would not have come under the surgeon's notice, as they are derived from sources most of which had not at the time realised how much surgery can do for commonplace cases of obstinate gastric trouble. The cases here reported are not selected, but with those of "severe gastric hæmorrhage" reported in THE LANCET in June last year,[1] with three cases of ulceration of the stomach and œsophagus from hydrochloric acid poisoning, which form the subject of a paper read before the Royal Medical and Chirurgical Society,[2] and with a case of tetany of gastric origin briefly noticed in THE LANCET,[3] they form a complete though small series of 22 non-malignant gastric cases. Most were operated on—a few were not. Remarks are appended to some of the cases individually. A few general observations may be divided into (1) those on perforation cases; and (2) those in which evidence of perforation was wanting or very inconclusive.

### PERFORATION.

Precision or certainty in diagnosis is, in most cases of gastric perforation, not possible, even to experienced persons. *But it is not necessary.* The medical man who waits for a case in which the peritoneal cavity is obviously distended with gas, obliterating the liver dulness, while the vomit contains blood, while excruciating pain and tenderness are localised in the stomach region, and there is a known previous history of gastric ulcer, with hyperacidity, hæmatemesis, epigastric tenderness, pain after meals, and dilatation

[14] Experiments in connexion with the application of inoculation in connexion with the last of these disorders are now in progress.
[15] Loc. cit.
[16] Loc. cit.

[1] THE LANCET, June 8th, 1901, p. 1597.
[2] THE LANCET, Nov. 17th, 1901, p. 1328.
[3] THE LANCET, Jan. 22nd, 1901, p. 1788.

of the stomach, may expect to become responsible for such melancholy cases as Case 3 and Case 4 detailed hereafter.

Quite a small number of the above symptoms should suffice to excite grave suspicions if they come on suddenly, and they need not be at all well-marked. If, then, the physician or practitioner cannot make up his mind as to what has happened, that uncertainty is not an indication for waiting but for immediately calling in the surgeon. The surgeon then shares the responsibility, and a grave and difficult one it often must be, especially if the case is far away in the country and "now or never" is the time for decision. The cases here recorded tend to show that it is best to settle the question of diagnosis by an immediate exploratory operation. Compare, for example, the results in Cases 1, 2, 3, and 4 with the results in Cases 5 and 6.

Sudden and severe abdominal pain with faintness and with or without vomiting are ominous symptoms in either women or men, especially if there is anæmia and a history suggestive of chronic indigestion. Note that in Case 2 there was absolutely no abdominal tenderness, no vomiting, and little pain or distension. Yet there was a gastric perforation, while the pus and lymph in the pelvis and elsewhere showed that the case was fully started on the course which led the patients in Cases 5, 6, and 8 to the grave and the subject of Case 9 into a condition of chronic invalidism.

With due care, gentleness, and experience an exploratory laparotomy becomes a simple and safe affair. If a large hole be made in the abdomen, the arm thrust in half way up to the elbow, and the hand carried round and round all over the viscera from the diaphragm to Douglas's pouch, a patient may be made alarmingly ill by it, especially if strict asepsis is not secured. But any procedure so rough as this is very rarely, if ever, necessary. Almost always a shrewd guess at localisation can be made before incision, and generally the pylorus or the cæcum, or whatever has to be dealt with, can easily be drawn outside and the neighbourhood explored with two or three fingers.

One of the first rules in all doubtful cases is, "Do not feed by the mouth." And do not be in a hurry to leave off rectal feeding. In Case 8 the patient who refused to be operated on was at first in a favourable position because so many hours had elapsed between the time of the perforation and of the last meal, but three or four days afterwards, when she had ceased to be under my care, oral feeding was recommenced. This may have contributed to bring about the fatal termination.

After operation, especially if Murphy's button be used and the patient be very low and not vomiting, liquid food may be allowed by the mouth very early, or even immediately. As vomiting would prevent this, very little general anæsthetic should be given, and that only during the really painful part of the operation. If ether or chloroform is being given the mask or other appliance should be taken off the mouth as soon as the stomach is brought out and not reapplied till the need for it is apparent. The surgeon ought to be allowed to *see* that the anæsthetic is not being given. Even if the patient soon vomits a little no great inconvenience is caused to the operator who has a reasonably good assistant. In the value of ether or any other drug "as a stimulant" during operation I do not myself believe. Let the patient be kept warm, the blood-vessels full, and the breathing free, and no stimulant will be needed. If these are neglected no stimulant is any good. After operation for perforation it is better to give only hot water, in half-ounce doses hourly by the mouth for several days and peptonised milk enemata, four ounces every four hours, with occasionally a 10- or 20-ounce enema of hot water to relieve the thirst or to strengthen the pulse. Plasmon is useful (one drachm to four ounces of milk). Opium is a great reliever of pain, but even as an anodyne it is a good deal less effective than correct surgical treatment, which it often fatally obstructs and hampers. I rarely give it. Large doses are bad and small ones are generally either ineffective or not necessary. Both large and small doses are apt to lull into a false feeling of security. This fault was conspicuous in several of these cases.

The precise nature of the illness of the patient in Case 7 was never determined. There may have been even at first hæmorrhage, but, in spite of her sex, I think that it was more probably perforation of a duodenal ulcer, localised peritonitis, improvement for 10 days, and finally severe hæmorrhage due to erosion or sloughing of some considerable vessel and death. It shows how insufficient even strict rectal feeding and rest may prove even in a most favourable case. Perhaps a timely gastro-enterostomy would have saved this patient.

One of the dangers of delay and of not applying surgery until a case is in a depressed and bad condition is that operation is then liable to be hurried and essentials may be thus overlooked. The pelvis was not explored and cleansed in Case 5. The pelvic peritoneum should always be examined, and, if necessary, cleansed, even when the peritonitis or perforation is in the upper half of the abdomen. The converse is not absolutely true. I mean it is not always desirable to examine the perihepatic peritoneal spaces when peritonitis has begun in the pelvis or about the appendix, but some lives are lost even through this not being done. Case 6 was in too desperate a condition for much surgery, and the fact that the prime focus of mischief was behind the stomach, through the foramen of Winslow, was not discovered till after death. I think it would have been quickly found at the operation had the surgeon been called in before the suppurative peritonitis was universal.[4]

Just as several of these cases show clearly the evil of delay and of waiting for death and a diagnosis to arrive together, sometimes treading close on the heels of surgery applied too late, so clearly is great credit due to the promptitude, knowledge, and acumen of Dr. A. H. W. Clemow, Dr. Otto Grünbaum, Dr. D. Fairweather, and Dr. H. Lawson, to which the patients in Cases 1, 2, 3, and 4 owe their lives.

As in Case 1 the rupture did not take place through an ulcer, but only in, or close to, a cicatrix, and as it was not the result of external violence I think it comes under the classification of "spontaneous rupture."

Although in Case 2 the lower limit of liver dulness was only pushed up about two centimetres above the edge of the rib cartilages, and even that was caused by air in the greatly distended transverse colon rather than by the small quantity of gas free in the peritoneal cavity, Dr. Grünbaum rightly attached great weight to the symptom. Diagnosis in this case was further complicated by the nervous and hysterical state of the patient. She had no abdominal tenderness.

In Case 11, that of the infant who was shot through the liver and stomach and who died on the eighth day, there are several obvious points which recall the case of President McKinley. This unfortunate child, aged 14 months, was handicapped by (1) marked rickets; (2) whooping-cough; and (3) a burn to the bone on the right heel. I regret now not having excised the whole of the bruised and extruded omentum. It was, however, carefully cleaned, not only by us, but by Mr. H. W. Chambers of Goldhawk-road who sent the patient into hospital so promptly. The oblique incision parallel to the edge of the rib cartilages proved admirable for exposing the whole stomach and even the spleen.

The patient in Case 5 had parotitis after operation for perforation performed on the fifth day. This case was also remarkable on account of the second perforation, which I am certain followed the laparotomy performed for the first perforation and polluted the sutures which lay near it, thus destroying what little chance of life this case possessed.

*Sub-diaphragmatic abscess.*—Cases 9 and 10 illustrate the long and dangerous period of chronic invalidism which may ensue even if a case of gastric perforation which is not operated on escapes the immediate danger to life.

### NON-PERFORATIVE CASES.

In THE LANCET of June 8th, 1901 (p. 1597), I have published four of these cases in which severe hæmorrhage occurred. Case 12 in this series ought really to have been published with those four, but it was forgotten, probably because it was not operated on. With regard to Case 8 the result may be traced, I think, to several causes. 1. To the overloading of the whole colon with masses of fæces, which overloading was due partly to the prolonged previous use of opium and partly to insufficient preparation of the patient before operation. It is quite possible that the persistent vomiting which had lasted for five weeks daily was itself partly caused by the opium and the constipation. 2. To the close continuous glover's suture with which I sutured the edges of mucous membrane together. Abscess between the layers of the stomach wall occurred and the suture in question must have tended to prevent the discharge of the pus into the gastro-intestinal canal. I know of two

[4] Kingston Barton writes: "If there is delay the symptoms become more general and less clear and the surgeon himself fails to recognise the necessity of immediate operation. Several of my cases sent to hospital were lost for this reason." (Records from General Practice, vol. i., p. 7.)

other similar cases in the practice of surgeons who suture the mucous edges together. When suppuration threatens beneath the skin we can often prevent it by removing sutures, but an analogous practice is impossible in the stomach. This Case 8 is interesting as having been apparently one of capillary hæmorrhage, as no ulceration was discovered even post mortem. The patient in one case had in the course of five years been twice "cured" by rest in bed and a milk diet, the cure once lasting for a whole year. In connexion with this case a few words may be said about Murphy's button.

*Murphy's button.*—Gastro-enterostomy by this means is, as von Miculicz and others point out, singularly free from the risk of the "circulus vitiosus" or persistent regurgitation into the wrong arm of the jejunal loop and so back into the stomach and round and round. Murphy's button seems to me to have other advantages. It keeps together broad surfaces of the two parts to be united. It keeps them uniformly together if carefully applied. It runs no risk of a weak point where one suture has not been put in so carefully as its neighbours or where one suture is exposed to undue strain. It is an obvious protection against recurrent hæmorrhage, a real danger in gastric operations. Further, it protects the parts of both stomach and intestine beyond its circumference from septic infection, just as a ligature round a finger would keep snake venom out of the general circulation. The speed with which it can be applied is a secondary consideration; indeed, I suspect that it tends to discredit the button, because it leads to its being selected for specially bad cases, and also leads to its being put in hurriedly. No hurry should be used; on the contrary, great care and precision are indicated in (1) adjusting the cut edges of the inner serous aperture to the central cylinder of the button, turning in all mucous membrane; (2) in putting in and tying the two or three silk sutures which finally reduce the size of the aperture; and (3) in bringing the two parts of the button correctly together and gradually closing them until the two serous surfaces are in absolutely close contact *all round* the button and slightly compressed together.

The chief drawback to the use of the button is its liability in gastric cases to fall back into the stomach, or even, it is said, into the wrong part of the jejunal loop. The former accident has happened to me twice, and once also the button remained for several weeks fixed in the gastro-enterostomy opening (in a case of hydrochloric acid poisoning not in this series). In the latter case I had not pressed the halves of the button tightly enough together. In these cases the button was easily localised with the x rays and as easily removed. Even before the advent of antiseptics and long before surgeons were as accustomed as they now are to gastric surgery gastrotomy for the removal of a foreign body was a very safe operation.

It has recently been said that "it is difficult to imagine anything more likely to irritate the ulcer than a Murphy's button being continually churned against it." The question is not one of imagination at all but of experience, which shows that the use of the button permits the ulcer to heal rapidly. And, why not? Murphy's button is not a solid chunk of cast iron, rough and angular, but is a hollow, light, rounded and polished ring of thin sheet metal. With regard to "churning," the stomach is a muscular organ, and when, thanks to a successful gastro-enterostomy, it has acquired the power of emptying itself with ease it grasps its contents and moves them on in an orderly and quiet manner. I am reminded of an objection urged by the late Mr. Adams of Bungay against lithotrity—that it "turned a man's bladder into a gravel pit."

The knob of each half of the button can be introduced through a surprisingly small cut in either the stomach or the intestine, a cut shorter than the diameter of the knob. An assistant should hold two points of the cut edge with catch forceps; the surgeon should then seize another point with dissecting forceps. The opening thus becomes triangular and through it the button knob, gripped by the edge with a pair of catch forceps, should be gently rotated and persuaded to pass in. The forceps which grips the button edge should then be handed to the assistant, while the surgeon puts in a couple of fine silk sutures through the "sero-muscularis" to tighten up. The substitution of these interrupted sutures for a running suture all round the button is, so far as I know, due to Carle and Fantino. Each button should be examined, tested, and found in good order as regards the spring and catches. But for this precaution I should on one occasion have used a defective button. In searching for a retained button with the x rays it is necessary to turn such patients as are not very thin on their faces. The button then falls forward close to the anterior abdominal wall, against which the screen should be placed.

*A Table by which this Small Series of 22 Cases may be Analysed into 11 Distinct Varieties.*

| Variety and No. of case. | — | Operated on or not. | Recovered or died. | — |
|---|---|---|---|---|
| I. 1 | Perforation operated on as such (Cases 1, 2, 3, and 4). | Operation. | Recovered. | Case 1 was a "spontaneous" rupture of the stomach. |
| 2 | | " | " | Each operated on from 24 to 30 hours after the perforation. |
| 3 | | " | " | |
| 4 | | " | " | |
| II. 5 | Perforations operated on as cases of general septic peritonitis two cases, each at least four days after perforation (Cases 5 and 6). | " | Died. | — |
| 6 | | " | " | Death partly due to a second perforation after operation on the first. |
| III. 7 | Perforations not operated on (Cases 7 and 8). | No operation. | " | — |
| 8 | | " | " | |
| IV. 9 | First seen as subphrenic abscess (Cases 9 and 10). | Operation. | Recovered. | — |
| 10 | | No operation. | " | Still imperfectly recovered. |
| V. 11 | Revolver shot wound of the stomach and the liver with extrusion of omentum (Case 11). | Operation. | Died. | — |
| VI. 12 | Persistent capillary (?) hæmatemesis (Case 12). | " | " | — |
| VII. 13 | Acute severe hæmorrhage (Case 13). | " | Recovered. | — |
| VIII. 14 | Old history of ulcer and very severe hæmorrhage, gastric dilatation. Tetany; death before there was time to summon a surgeon (Case 14). | No operation. | Died. | — |
| IX. 15 | Ulcer several times relapsed after dietetic treatment in hospital (Case 15). | Operation. | Recovered. | — |
| X. 16 | The three cases of hydrochloric acid poisoning. | Operation. | Recovered. | — |
| 17 | | " | " | Much better for gastrostomy, but died nearly two months afterwards from progressive ulceration of the œsophagus and direct infection of the lung. |
| 18 | | No operation. | Died. | — |
| XI. 19 | The four severe hæmorrhage cases.* | Operation | Recovered. | |
| 20 | | " | " | — |
| 21 | | No operation. | Died. | — |
| 22 | | " | " | — |

* See THE LANCET, June 8th, 1901, p. 1597.

Thus of the 15 cases operated on 11 patients recovered and four died. Of the seven cases not operated on, six patients died, and the sole survivor is still more or less an invalid. Of the four fatal operated cases, two were of general septic peritonitis operated on four days after perforation; one was that of the infant shot through the liver and

stomach, and one patient alone could be fairly said to have died from operation. On the 15 patients who were operated on 17 laparotomies were done.

*(To be concluded.)*

## AN EXAMPLE OF UNIVERSAL HIRSUTENESS.

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THE extreme rarity of cases of universal hirsuteness and the fact that a portrait of this example of it in his middle age has never been published by anyone else may perhaps be a sufficient apology for my submitting it to the notice of the readers of THE LANCET. The person represented is the son of the Burmese woman named Maphoon who was a classical instance of the same peculiarity, her father, Shevémaong, having also presented the same condition. Among the most noted instances of universal hirsuteness are a Russian, Andrian Jeftichjew, and his son Feodor, the hairy family of Ambras, and the Burmese child Krao. The condition is hereditary, it is also congenital, and it is accompanied by a congenital deficiency of the teeth.

In the family to which the person here represented belonged the condition ran through three generations, but Maphoon, who was the youngest of four sisters (she had no brother), was the only one of the four who was affected in the same manner as her father. She had two sons, of whom the younger alone inherited her peculiarity (Fig. 1).

FIG. 1.

Maphoon and her younger son in 1855. From a drawing by Mr. Colesworthy Grant, by permission of Messrs. Smith, Elder, and Co.

Although the condition is congenital it develops itself slowly. Shevémaong and his hirsute daughter and grandson were not born universally hairy but with abnormal hairiness of the ears only; during their infancy and their earlier childhood they became by degrees universally hairy. As to the congenital deficiency of teeth which accompanies this condition Shevémaong at no time had any back teeth. When he was 30 years old the only teeth which he had were the four incisors in his upper jaw and the four incisors and the left canine in his lower jaw, but he had never lost any tooth. His daughter, Maphoon, in adult age had developed only the eight incisors. As to her son, of whom an illustration is given herewith (Fig. 2), I have no information as to the condition of his teeth. However, in the case of Andrian Jeftichjew the back teeth of his upper jaw never appeared, although the row of teeth was complete in his lower jaw. His son Feodor when three years old had an absolutely toothless upper jaw and possessed only the four incisors in his lower jaw.

FIG. 2.

Maphoon's younger son in middle age.

In the case portrayed in this paper the normally bare surfaces, but more particularly the face, are covered with an abundant growth of hair. The face is completely covered with thick and long hair excepting only the red margin of the lips and the upper eyelids, so that his face presents a scarcely human appearance. The hair growing on those regions which are usually bare is soft and fine in texture so as to resemble wool rather than ordinary hair. The hair is more abundant over the shoulders, back, and breast than over the abdomen and the limbs. The palms, the soles, and the last joints of the digits are absolutely bald.

For the portrait of Maphoon and her infant younger son I am indebted to the kindness of Dr. H. P. Cholmeley, whose father, the late Dr. Henry Cholmeley, of the Madras Service, went as medical officer to the escort of a mission sent to the Court of Ava by the then Governor-General of India in 1855 and saw the child when he was 14 months old. In the Narrative of the Mission, written by Captain Yule and published by Messrs. Smith, Elder, and Co., occurs the

following passage. Captain Yule says, after describing Maphoon:—

"Her husband and her two boys accompanied her. The elder, about four or five years old, had nothing abnormal about him. The youngest, who was 14 months old and still at the breast, was evidently taking after his mother. There was little hair on the head, but the child's ear was full of long silky floss, and it could boast a moustache and beard of pale silky down that would have cheered the heart of many a cornet."

Dr. Cholmeley has had the portrait of Maphoon and her infant son reproduced and has sent it to me together with the above quotation. Owing to his courtesy I am able to exhibit portraits of the man at two different ages and thus to add considerably to the interest of this communication.

Weymouth-street, W.

## A CASE OF APPENDICITIS IN WHICH THE APPENDIX WAS LODGED IN, AND ADHERENT TO, THE FEMORAL CANAL.

BY JOHN HENRY GALTON, M.D. LOND.,
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THE patient was a woman, aged 32 years whose previous history was to the effect that in January, 1900, she had an attack of appendicitis from which she recovered. I saw her on Oct. 11th, 1901, when she had been suffering for some days from indigestion and abdominal pains, and was at the time complaining of pain in the right lower abdomen, with tenderness over McBurney's point. Her temperature was 98° F. and her pulse-rate was 90; there was no abdominal tension at any part. She was given an ounce of castor oil with 15 minims of tincture of opium and 20 minims of spirits of chloroform. On Oct. 12th at 11 A.M. her temperature was 107° and her pulse-rate 118; in the right iliac region there was great pain together with dulness and muscular tension, but there was no general abdominal tension. She was given 10 grains of citrate of potassium and eight minims of tincture of belladonna every four hours. At 7.30 P.M. her temperature was 101·4° and her pulse 100. On the forenoon of the 13th her temperature was 102°, her pulse 100, and her respiration 30; at 6 P.M. her temperature was 102° and her pulse 100. On the 14th her temperature was 101·6°, her pulse 87, and her respiration 26. At 9 A.M. she had an enema which acted well, producing a solid motion. The swelling in the right iliac region reached to within an inch from the umbilicus. At 10 A.M. on the 15th her temperature was 100·4°, her pulse 88, and her respiration 24; at 6 P.M. her temperature was 99°, her pulse 80, and her respiration 23. On the 16th her temperature was 98°, her pulse 70, and her respiration 23. On the 17th her temperature was 98°, her pulse 68, and her respiration 22. On the 18th her temperature was 97°, her pulse 70, her respiration 21, and so on to complete recovery.

On Nov. 2nd she was admitted to Norwood Cottage Hospital and her food and bowels were regulated till the 4th. At 11.30 A.M. on that day chloroform was administered by Dr. C. E. Michael and with the assistance of Mr. J. Sidney Turner and Mr. A. Scott-Turner the following operation was performed: An incision four inches long was made parallel to Poupart's ligament and one and a half inches above it, and the peritoneum was carefully opened at the upper end. The head of the colon was found to be adherent to the anterior abdominal wall just below the incision. It was extremely difficult to find the appendix, which was firmly bound down by a strong meso-appendix adherent throughout its length to the posterior wall of the abdomen and dipping down for a quarter of an inch into the femoral canal, to which it was adherent. A strong and old adhesion also bound it to the ileum. The meso-appendix was pierced at an inch from the cæcum and a ligature which was passed round the appendix at this part gave control over the process during the operation. The adhesions of the appendix to the posterior wall were soft and separable by the nail, but in the process of doing this the soft and swollen appendix was torn in the middle and both ends were at once secured with Spencer-Wells forceps and ligatures of carbolised silk. The separation was then continued till the tip of the appendix had been enucleated from the femoral canal. The strong adhesion to the ileum was then ligatured and tied with silk and the meso-appendix was divided into four parts each of which was separately ligatured. A portion of peritoneum was then dissected back from the appendix above the temporary ligature and a permanent ligature applied half an inch from the cæcum; the whole appendix was then cut off, a drop of strong carbolic acid was applied to the mucous membranes, and the deflected peritoneum was drawn over and secured by two fine silk ligatures. During the operation the parts were isolated by two flat sponges and pads of iodoform gauze well packed behind the parts. Four deep stout silver wire sutures including the peritoneum and five horsehair sutures closed the wound which was dressed with iodoform gauze wool and a spica bandage. The operation lasted for one hour and 40 minutes. The appendix, which was three and a half inches long, was much thickened throughout, the termination being as large as the thumb (male), and it contained fluid stercoraceous matter, and at the distal end a stercolith quite square with well-defined angles, fairly hard, but crumbling on pressure and dry in the centre, having apparently no nucleus of foreign matter.

After the operation the patient's temperature was 98° and her pulse 74; at 10 P.M. her temperature was 98·4° and her pulse 80; there were retching and a little sickness; only sips of hot water were given for 24 hours. At 2 A.M. on Nov. 5th her temperature was 100°, her pulse 81, and her respiration 20. A nutrient suppository was given every six hours. In the forenoon her temperature was 99°, her pulse 78, and her respiration 21; there was good abdominal respiration. At 6 P.M. her temperature was 99·4° and her pulse 79; milk and barley-water were given, one drachm every two hours. On the 6th her temperature was 99°, her pulse 70, and her respiration 21; there was slight abdominal pain. On the 7th her temperature was 98°, her pulse 70, and her respiration 20; menstruation came on, 10 days overdue; three pints of milk were given, with beef essence twice a day. On the 8th her temperature was 98·4° and her pulse 72; an enema of soap-and-water brought away a good solid motion. On the 9th she had fish and on the 10th she had chicken. On the 11th the wound was dressed for the first time; union was found to be firm throughout and all sutures were removed. On the 16th she left the hospital quite well.

The case is worthy of record as one of an unusual position of the appendix. Mr. A. H. Tubby in his excellent monograph on appendicitis only mentions one such case as recorded by Sir F. Treves, and this was associated with a femoral hernia and therefore more easily explicable. The condition of the parts during the operation also and the ease with which the more recent adhesions were separated pointed to some ground for determining the period of selection for operation, for had the present case been deferred till a later period it would have been impossible to separate the adhesions which time would then have strengthened.

Upper Norwood.

# Clinical Notes:

## MEDICAL, SURGICAL, OBSTETRICAL, AND THERAPEUTICAL.

### A CASE OF INOPERABLE CANCER; FAVOURABLE RESULT FROM OÖPHORECTOMY AND THYROID FEEDING.

BY WALTER EDMUNDS, F.R.C.S. ENG.,
SURGEON TO THE TOTTENHAM HOSPITAL; SURGEON FOR OUT-PATIENTS TO THE EVELINA HOSPITAL FOR SICK CHILDREN.

A WOMAN, aged 36 years, married and with four children, had noticed for two years a tumour in the left breast. It appeared to be an adenoma but on operation it was found to be a carcinoma with infection of one at least of the lymphatic glands. The breast and axillary glands were removed. This was in 1894 and 15 months later a recurrence appeared at or near the scar. This was excised. Except for one or two minute recurrences which were removed under cocaine the patient continued well till October, 1899—five years from the first operation—when she became extremely ill with symptoms of intra-thoracic growth and bronchitis.

There was also a recurrence in the right (remaining) breast. The bronchitis got better but the patient remained very weak and emaciated, and suffered from dyspnœa on exertion together with frequent asthmatic attacks. In January, 1901, she was seen in consultation with Dr. C. R. Box. There was a tumour in the right breast with enlargement of the axillary glands, also a small flat tumour in the skin behind the left ear. She complained of shortness of breath and attacks of dyspnœa at night. There was evident stridor which was bilateral. The chest was fairly resonant save at the left base where the vocal fremitus was diminished. There was still, therefore, clear evidence of intra-thoracic pressure. The catamenia had ceased during the illness in October, 1899, and had not reappeared. Oöphorectomy with subsequent thyroid feeding was recommended. This was consented to, and the operation was performed on March 11th, 1901. One ovary was found to be atrophic, the other appeared normal. Thyroid feeding was commenced early. On March 28th (15 days after the operation) the tumour in the breast and that behind the ear were both thought to be smaller.

The patient came up to be seen on May 14th (two months after the operation). She was clearly much better and stronger. The tumour in the right breast and the glands in the axilla had almost disappeared and the recurrence behind the left ear was also much smaller and the stridor had disappeared. The breath sounds over the right lung were harsh and over the left lung faint. The stridor had disappeared. On March 4th, 1902 (a year after the operation and commencement of thyroid treatment), the patient had gained flesh, become much stronger, been nearly free from dyspnœa, and, in fact, was quite a different woman. There was then a small tumour in the right breast (the patient said that at one time it had completely disappeared), and a lymphatic cord could be felt running up towards the axilla, but there were no enlarged glands in the axilla and the small growth behind the ear had disappeared. Dr. Box reported that the signs in the chest were practically unaltered since the examination of May, 1901—two months after the operation. The thyroid feeding was continued regularly for four months after the oöphorectomy and irregularly up to the present time.

Whatever may be the further history of this case, the great benefit which has been enjoyed for a year has entirely justified the operation. As both oöphorectomy and thyroid feeding were had recourse to this case throws no light on their relative efficiency, but Mr. Stanley Boyd gave no thyroid in his cases, and Mr. H. T. Butlin found no benefit from thyroid feeding alone. Mr. F. Page and Dr. W. H. Bishop,[1] however, have recorded a case in which this treatment did much good, and in a recent paper by Mr. A. M. Sheild [2] reference is made to another case in which great relief is stated to have followed thyroid feeding without oöphorectomy. In cancer of the uterus Dr. R. Bell of Glasgow [3] has recorded two cases cured or greatly benefited by thyroid treatment, and quite recently Dr. H. A. Beaver [4] has given us another such case. Thyroid feeding, too, as is well known, will greatly reduce or cure certain goitres, so there is nothing incredible in it benefiting other tumours. As our primary object is clinical and not scientific, it would seem best in the present state of knowledge to give thyroid and to continue it, if it produces no ill-effect, for the rest of the patient's life. Occasionally in cancer of the breast recurrence occurs only very late—in another case the disease reappeared 11 years after the original operation. Now one explanation of these cases is that a focus of disease has been lying dormant till it is stimulated into active growth by some change in the metabolism of the body, in which the partial atrophy of the thyroid which occurs with advancing years may be a factor. It would therefore be rash to conclude that there can be no use in these cases in thyroid feeding.

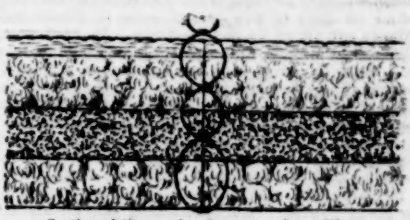
Devonshire-place, W.

## A NEW DEEP SUTURE.

BY S. L. WOOLMER, M.R.C.S. ENG., L.S.A.

I BEG to introduce to the profession a new form of deep suture which has in my hands proved very useful and which must commend itself where sutures have to be applied in superimposed planes. In all laparotomy wounds, in wounds of the body involving muscles and tendons, and in amputations, the general rule has been to suture each layer separately, and of these layers, when they are three, two become necessarily "buried." Only surgeons whose experience is extensive know what are the ulterior results of many buried sutures in spite of their perfect asepticity. The suture which I propose overcomes all objections which can be laid to the account of permanent buried sutures, for the reason that it is only a *temporary* buried suture. It also saves time in its application, as there is only one knot to be tied and one pair of suture ends to be cut off, instead of three, when the suture is applied separately to each plane.

The illustration represents its use in a case of laparotomy, where its application first suggested itself to me.



Section of tissues showing suture in position.

A piece of silkworm gut of sufficient length is threaded with a double needle and the first insertion is made at the bottom of the wound, including subperitoneal fat and peritoneum. The needle is then carried across the peritoneal section and made to emerge in the subperitoneal fat of the other side at a point opposite that of its first entrance. Thence it is carried across the wound and made to penetrate the two layers of the aponeurosis within the rectus muscle. The other needle is now made to embrace the opposite side and is then crossed to penetrate the tegument, the suture being completed by the first needle, which issues from the skin on the opposite side. The suture is tightened with a slight rocking movement and tied in the ordinary manner. In order to effect its removal the silkworm gut is pulled upon on one side of the knot and then cut close, whereupon it recedes within the skin. Slight traction upon the knot is sufficient to withdraw it. It will thus be seen that one can secure perfect apposition of a deep wound without any of the disadvantages which accompany a permanent buried suture. I have only applied it in a case of laparotomy, a deep incised wound of the muscles of the forearm, and an amputation of the thigh, but its applications are obvious and extensive. For example, it should be the ideal suture in a case of ventrofixation of the womb.

I have not seen this form of suture described in any work of reference within my reach and if I am guilty of piracy the act has been unintentional.

Concordia, Argentine Republic.

## NOTE ON ACCIDENTAL VACCINAL INFECTION OF THE NIPPLE.

BY FREDERICK SPURR, L.S.A.

ALTHOUGH accidental vaccination is by no means an unheard of occurrence the following case is sufficiently unusual to be worth recording.

On Dec. 25th, 1901, a married woman, 34 years of age, came to me complaining of great pain and tenderness in the left breast, soreness of the nipple, and a painful swelling in the axilla of the same side. She had had four children, all of them living, the last confinement taking place two months before. She had suckled all her children and had previously suffered from "cracked" nipples. She informed me that for several weeks the left nipple had been slightly "cracked" and sore at intervals. On Thursday, Dec. 19th, she noticed several whitish spots on and around the nipple, which became larger from day to day and more and more painful, but it was not until Christmas Day that she sought advice. On examining the breast I found the nipple swollen, reddened, and having an areola of intense inflammation round its base. This inflamed areola extended for about half an inch beyond the root of the nipple and was quite œdematous in appearance. On the inner side of the nipple itself there was a circular vesicle, one-third of an inch in diameter, with raised margin and a depressed centre, surrounded by a zone

[1] THE LANCET, May 28th, 1898, p. 1460.
[2] THE LANCET, March 8th, 1902, p. 647 (Case 15).
[3] British Gynæcological Journal, August, 1896.
[4] Brit. Med. Jour., Feb. 1st, 1902.

of deep inflammatory redness. On the swollen areola round the base of the nipple were situated six similar but smaller vesicles, each one being distinctly umbilicated. Four of them were on the inner side and the remaining two were on the upper and outer side of the base of the nipple. Over the greater part of the breast the skin was red and tense and the axillary glands were enlarged. There was great tenderness over the whole of the breast. The temperature, taken in the mouth, was 100·6° F. and the pulse was 120.

Although the vesicles were suggestive of vaccinia in their appearance and in the history of their development the diagnosis of the case would probably have been somewhat puzzling from the unusual situation of the lesions but for my recollection of the fact that on Dec. 4th I had vaccinated the four children of this patient, none of whom had been previously submitted to the operation. In each case good results were obtained and when the arms were inspected on the tenth day they each presented four perfect though somewhat slowly developed vesicles. In the case of the two-month-old baby there was a good deal of inflammation and I therefore saw the child again on the 16th, when I found the vesicles had been broken and there was then a considerable amount of discharge from them which the mother afterwards told me continued for some days. I advised her to bathe the arm frequently and to dredge over it some boric powder. On questioning her closely I learnt that she had misunderstood my directions and had merely wiped away the discharge with a small piece of dry wool and that she was in the habit of putting the child to the breast immediately afterwards without previously washing her hands. In doing so she no doubt conveyed the vaccine matter directly from the baby's arm to the abraded surfaces on her own left nipple and thus unwittingly infected herself. It may be added that she had not been vaccinated since she was two years old.

Commercial-road, E.

# A Mirror OF HOSPITAL PRACTICE, BRITISH AND FOREIGN.

**Nulla autem est alia pro certo noscendi via, nisi quamplurimas et morborum et dissectionum historias, tum aliorum tum proprias collectas habere, et inter se comparare.—MORGAGNI *De Sed. et Caus. Morb.*, lib. iv., Proœmium.**

## ST. GEORGE'S HOSPITAL.

### A CASE OF PERFORATED DUODENAL ULCER; OPERATION; RECOVERY.

(Under the care of Dr. CYRIL OGLE and Mr. A. MARMADUKE SHEILD.)

DUODENAL ulcer is decidedly more common in men while gastric ulcer is more frequent in women but the symptoms produced by perforation of a duodenal ulcer resemble so closely those arising from perforation of a gastric ulcer that a diagnosis between the two conditions is rarely possible before the abdomen is opened. It is very desirable that all cases should be recorded in which an operation has been performed for a perforated duodenal ulcer, whatever may have been the result, so that we may obtain data on which to found trustworthy statistics. For the notes of the case we are indebted to Mr. T. Crisp English.

A man, aged 36 years, walked into St. George's Hospital on July 26th, 1901, giving the following history. Four hours previously, when at work, he had been suddenly seized with violent abdominal pain which completely "doubled him up." This was accompanied by vomiting, collapse, and profuse sweating. In a short time he recovered but as the pain and vomiting continued he went to the hospital. He attributed these symptoms to having eaten half a pound of unripe cherries on the previous evening. In the past medical history of his life there had been no similar attack nor had there been any dyspepsia or other gastric trouble. Free indulgence in beer and spirits was admitted. On examination the patient presented an alcoholic aspect with marked acne rosacea. There was nothing in his appearance to suggest that he was seriously ill but he complained of intermittent colicky pain about the umbilicus and was sweating freely. There was slight tenderness in the epigastrium but there was no distension or rigidity of the abdominal wall which moved freely with respiration; the liver dulness was normal. There were no signs pointing to trouble in the region of the vermiform appendix. The pulse was 80, of good quality, and the temperature was 98·4° F. The only obvious symptoms, therefore, were colicky pain and slight epigastric tenderness and the diagnosis rested between intestinal colic resulting from the unripe cherries, biliary and renal colic, lead colic, and an acute peritoneal lesion in the stage of reaction.

The case was obviously one to be carefully watched and the patient was admitted by Dr. Cyril Ogle. Food by the mouth was withheld and the pain was treated by hot applications; enemata were administered and acted freely; no morphia was given throughout the case. The patient was at first much relieved but in the evening the pain again became severe, whilst the pulse-chart which had been carefully taken showed a progressive increase in frequency. At 6 P.M. it was 96, at 10 P.M. 110, at 12 midnight 116, and at 2 A.M. 128. The abdomen was now becoming markedly rigid and tender and vomiting occurred three times. The liver dulness, which as previously stated was normal on admission, now disappeared to the left of the right nipple line. On the following morning, after a consultation between Dr. Cyril Ogle and Mr. Marmaduke Sheild, a diagnosis of perforated gastric or duodenal ulcer was made and operation was determined upon. Mr. Sheild opened the abdomen in the middle line above the umbilicus (28 hours after perforation) and found free gas and a large quantity of bile-stained fluid in the peritoneal cavity, with early general peritonitis. A rapid examination of the stomach showed that this organ was intact, but on examining the duodenum a small perforation was found on its anterior aspect, just beyond the pylorus. This was closed with a double row of Lembert sutures which held readily and an omental graft was also sewn on the part of the operated area. The peritoneum was then thoroughly irrigated and cleansed with sponges, special attention being paid to the right kidney pouch and iliac fossa. The abdominal wound was closed, no drainage being employed. The operation lasted 25 minutes. The patient was kept on rectal feeding for four days, after which small quantities of peptonised milk were given and the amount was gradually increased. There was no return of pain or vomiting; the bowels were very freely opened by enemata containing one drachm of magnesium sulphate, one and a half drachms of glycerine, and water to four ounces. The wound healed perfectly and recovery was complete, the patient getting up at the end of the third week.

*Remarks by* Mr. ENGLISH.—Very few cases are on record of successful operation for perforated duodenal ulcer. Indeed, Mr. B. G. A. Moynihan[1] in an exhaustive examination of all the recorded cases, could only find eight instances of recovery. Within the last few years this subject has come prominently under the notice of surgeons and it is of importance that all cases, fatal or otherwise, should be reported, that in this way a reliable foundation may be built on which to extend our knowledge of the disease.

In connexion with the above case may be related another case of perforated duodenal ulcer in which death took place shortly after admission to the hospital, on May 11th, 1901. The patient was a dairyman, aged 32 years, who for one week had suffered from indigestion with vomiting. On May 10th at 11 A.M. he was seized with sudden agonising pain in the abdomen followed by severe vomiting and profound collapse. He was taken home and seen by a medical man. The pain and vomiting continued and the abdomen became distended but the patient was not sent to hospital until 9.30 P.M. on May 11th. On admission he was extremely pale and collapsed, the radial pulse could scarcely be felt, the temperature was 96° F., and the extremities were cold. Intense abdominal pain was complained of. The abdomen was greatly distended, tender, and rigid. Liver dulness was completely absent, a tympanitic note being obtained all over. In spite of full doses of strychnine subcutaneously, brandy, &c., he died in about half an hour, 35 hours after perforation. The necropsy revealed advanced general peritonitis, with much gas and fluid in the peritoneal cavity. In the upper aspect of the

[1] THE LANCET, Dec. 14th, 1901, p. 1666.

first part of the duodenum just beyond the pylorus was a sharply punched-out ulcer of about the size of a threepenny-piece, with a small circular perforation at the bottom of it. There were no adhesions or thickening round the ulcer.

The first case forms an excellent illustration of a fact which is, perhaps, not sufficiently emphasised—namely, that there frequently exists a well-marked stage of reaction in acute peritoneal lesions. Failure to recognise this has frequently led to errors in diagnosis and serious delay in treatment. Three distinct stages may be described in these cases. First, the stage of collapse, which is usually profound and which with the agonising pain and vomiting forms the clinical condition known as "peritonism." A history of the sudden onset of these symptoms in a healthy individual is strongly suggestive of some very serious lesion within the abdomen and forms a valuable aid in the diagnosis of the condition. The second stage is that of reaction and this may prove very misleading. The patient rallies from the initial shock, the general condition improves, whilst the pulse and temperature may be normal and the abdomen may present no evidence of serious mischief. The patients may, as in the case related above, walk into a hospital with the contents of their intestines leaking into the peritoneal cavity. If first seen in this stage, as is frequently the case, a too hopeful view is apt to be taken, the patient is not carefully watched, and thus by delay the chances of recovery are minimised. Should morphia, as is usually the case, have been given freely the symptoms are still further obscured. The third stage is that of the onset of obvious peritonitis, in which the general condition progressively deteriorates, the pulse increases in frequency, and the condition of the abdomen points unmistakably to a widespread infection of the peritoneum. Progressive quickening of the pulse is a sign of the utmost importance.

It is noteworthy that vomiting in cases of perforated duodenal ulcer is usually pronounced and persistent from the beginning, contrasting with the vomiting in perforated gastric ulcer, which occurs as an initial symptom in about 40 per cent. of the cases and rarely persists. The mortality of the affection is necessarily very high. Mr. Moynihan places the mortality of cases operated upon at 84·6 per cent. It must, however, be remembered that it is certain that many of the fatal cases are not recorded, whilst, on the other hand, it is probable that some perforations are sealed by the formation of adhesions and that a natural cure results. In still other instances abscesses have formed and these have been known to "track down" behind the peritoneum. One of the principal operative difficulties is to find the ulcer when this is small and situated towards the posterior aspect of the gut; indeed, the lesion has repeatedly been "missed" by operators and has actually only been discovered with difficulty at the necropsy.

Dr. Cyril Ogle and Mr. Marmaduke Sheild kindly gave me permission to publish this case.

## EDINBURGH ROYAL INFIRMARY.

### A CASE OF TABES WITH ACUTELY DEVELOPED ATAXIA IN WHICH GREAT AND RAPID IMPROVEMENT RESULTED FROM FRENKEL'S PLAN OF TREATMENT.

(Under the care of Dr. BYROM BRAMWELL.)

THE value of Frenkel's treatment of locomotor ataxia is by no means yet generally acknowledged and therefore the following case will be of interest. In the rapid onset of the ataxia and its almost equally rapid disappearance, even though Frenkel's treatment was employed, Dr. Bramwell's case differs markedly from most cases of tabes and therefore it does not, perhaps, prove very clearly the benefit of this form of treatment.

The patient was a married man, aged 35 years. For five years he had been a barman and for 16 years previously a ship-steward. He was admitted into the Edinburgh Royal Infirmary on Jan. 22nd, 1902, because of inability either to stand or to walk. He had enjoyed good health until the present illness commenced. He absolutely denied having had syphilis or gonorrhœa. There was no suspicion of alcoholic excess; his average allowance of alcoholic liquor was four glasses of beer per week; he did not take more than 12 glasses of whisky per annum. He was not a heavy smoker. For six months before the inability to walk developed he had had some, but only slight, shooting pains in the legs, more especially the left leg, which was sometimes swollen at night, the result, he thought, of varicose veins. He had occasionally experienced a dull pain in the back and some little difficulty in micturition, having to "force" a little to get the urine away. The inability to walk developed rapidly on Jan. 13th, 1902. For a fortnight before this date he had felt some stiffness and "pins and needles" in his legs and feet but had no difficulty in walking in the dark. He was in the habit of walking from his place of business to his house—a distance of about a mile—every night at 12 o'clock. On Sunday, Jan. 12th, he walked three miles. On the 13th he had great difficulty in walking from one room to another and on the 14th he was quite unable either to stand or to walk.

On examination it was found that the inability to stand and walk was due to ataxia. There was no paralysis. The muscularity of the legs was good. The movements of the legs were wildly ataxic. There was no ataxia in the arms. When the eyes were closed there was total loss of the sense of position, both during and after passive movements, in the lower extremities. Occasional shooting (lightning) pains were complained of in the legs (thighs and calves). There was some varicosity of the veins of the left leg. The left calf measured 12½ inches and the right calf 11½ inches in circumference. The patient was a short, spare man. The knee-jerks and Achillis-jerks were completely absent, even after reinforcement; the deep reflexes in the upper extremities were present but not exaggerated; the jaw-jerk was present. The direct muscular excitability of the anterior and posterior muscles of the leg and of the quadriceps group was slightly increased; there was no myoidema contraction. The plantar reflex was very active in both legs, the toe movement being flexion; the cremasteric reflex was absent on both sides; the abdominal reflex was present but slight. The pupils were unequal in size and markedly dilated; the right measured eight millimetres and the left 10 millimetres; they were quite insensible to light and only contracted very slightly in the act of accommodation, the right pupil becoming six millimetres and the left eight millimetres in size; they did not dilate on powerful stimulation (pinching and faradic irritation) of the skin of the neck. There was well-marked thoracic and ulnar analgesia and there were considerable analgesia and anæsthesia of the lower extremities. Biernacki's sign was not present. There was also marked analgesia of the muscles of the calf. There was some, but only slight, hypotonia. There was no girdle sensation. A slight dull pain in the "small of the back" was occasionally experienced. Slight difficulty in micturition (necessitating "forcing") was occasionally experienced; the bowels were regular; there was little or no loss of sexual desire and power. There had never been diplopia or ptosis; the ocular movements and the optic discs were normal; the special senses were normal; there were no crises and no trophic or vaso-motor derangements. The mental functions were unimpaired, there was no articulatory defect, and there were no facial or tongue tremors.

A striking and rapid improvement resulted from Frenkel's plan of treatment. On Jan. 22nd the patient was unable to stand or to walk, the movements of the legs being wildly ataxic. Frenkel's treatment was commenced on the 27th. In the course of 10 days (on Feb. 7th) the patient was able to stand and to walk with the help of a go-cart. A week later (the 14th) he was able to walk with the help of two sticks. On March 5th he could walk steadily and well with sticks and he could also walk across the room fairly well and without a marked ataxic gait without sticks—i.e., totally unsupported.

*Remarks by* Dr. BRAMWELL.—The case is interesting because of the following features:—1. The absolute and apparently quite straightforward denial of the patient that he had ever had syphilis or gonorrhœa. 2. The rapidity with which the ataxia was developed. I have lately analysed 155 cases of tabes which came under my notice and in only three of them was the ataxia very rapidly developed. 3. The dilated condition of the pupils. In 104 of the 155 cases of tabes which I have analysed the size of the pupils was mentioned in the notes. In 69 of these 104 cases, or 66·3 per cent., the pupils were contracted (below three millimetres); in 27 cases, or 25·9 per cent., they were of medium size (between five and three millimetres); and in only eight cases, or 7·6 per cent., they were dilated (above five millimetres). 4. The rapid improvement which resulted from Frenkel's method of treatment.

# Medical Societies.

## MEDICAL SOCIETY OF LONDON.

*Discussion on the Treatment of Puerperal Eclampsia.*

A MEETING of this society was held on March 24th, Dr. W. H. ALLCHIN, the President, being in the chair.

Dr. G. ERNEST HERMAN opened a discussion on the treatment of puerperal eclampsia by a paper entitled, "Some Points in the Treatment of Eclampsia." The two points, he said, to which he would confine his attention were (1) Was emptying the uterus the appropriate treatment and would it stop the fits? and (2) the use of the tepid bath in the treatment of the condition. Dr. Herman quoted the teaching of old and recent writers to the effect that emptying the uterus stopped the fits and that therefore this procedure should be the first thing in treatment. He pointed out that although this had been taught for at least three generations its recent defenders tacitly recognised that it still needed proof. He brought forward statistics drawn from the practice of many lying-in hospitals, based upon a large number of cases, and showed that in every institution in which experience was large enough it was found that fits continued after delivery about as often as they ceased with it. He showed that the statement that "after delivery the fits at once cease" could not possibly be reconciled with the facts. But even if the fits did not at once cease, perhaps the acceleration of delivery might yet favour recovery? Dr. Herman inquired if this were so and he found that in the most recent maternities, conducted in the best manner with strict antisepsis, the mortality of eclampsia cases delivered naturally and of those in which the emptying of the uterus was accelerated was about the same. In some institutions in pre-antiseptic times the mortality of accelerated delivery had been in eclampsia cases much higher than that of those allowed to be naturally delivered; and this would probably be so again were it taught that labour in all circumstances should be induced. Dr. Herman then referred to those cases of eclampsia in which death took place by steadily rising temperature and pulse. He thought that the most hopeful and reasonable treatment of such cases was to bring down temperature with the tepid bath. He related a case in which, with a temperature of 105° F. and a pulse of 170, the former was reduced to 102° by the bath and recovery followed. He also referred to a somewhat similar case in private practice.

Dr. J. M. AMAND ROUTH remarked that the prevailing belief in the treatment of emptying the uterus depended on the reasons given for the operation. It was generally admitted that the nephritis was largely dependent upon the toxic condition of the blood, a condition which was largely relieved when the child and the after-birth came away. The treatment by the tepid bath was not always so successful as in the case quoted by Dr. Herman; and he (Dr. Routh) narrated a case in illustration. The temperature, which went up to 107°, was reduced to 101° several times but the patient died. After death the axillary temperature was 109°.

Dr. F. J. MCCANN remarked that puerperal eclampsia was now known not to be due to pressure on the vessels and he quoted some older authors who taught that rapid delivery was not the correct treatment. Morphia and saline injections evidently aided the tepid bath in Dr. Herman's case. The fact that the fits continued after delivery did not prove that emptying the uterus was not the correct treatment. The fits often underwent considerable diminution after delivery though they might not altogether cease.

Dr. W. J. GOW remarked that the actual pathology of the disease was unknown. A certain number of patients in these cases died and others got well whatever was done, and the real question was whether treatment aided the recovery of those who would otherwise die. The appropriate treatment would be to eliminate the poison on which the convulsions depended. Failing this half measures might be adopted such as calming the nervous system. His opinion was that the mere process of induction of premature labour aggravated the fits, though the emptying of the uterus might ultimately relieve them. Morphia or chloroform with an expectant treatment was preferable to more violent methods.

Dr. H. CAMPBELL POPE referred to cases of eclampsia which occurred largely in one particular village in which there seemed to be a special tendency to the disease.

Dr. W. RIVERS POLLOCK remarked that whatever was done violent methods for the rapid induction of labour such as those suggested by Dührssen should not be adopted, though milder methods might be applicable.

Mr. JONATHAN HUTCHINSON, jun., asked whether trephining the head might not be useful. He had seen one case in which the patient, a male, suffering from eclampsia, had received immediate relief in this way.

Dr. R. A. GIBBONS remarked that the etiology of the condition was uncertain. It was, at any rate, a poison which could produce rapid degeneration of the vessels of the liver and other large glands. The patient might die from the intensity of this poison. Anything, therefore, which could dilute the poison was useful and that was why he advocated the use of saline injections. His experience was that the outlook was more favourable when the uterus was empty—though he did not always advocate artificial means. As a means of prevention the urine of pregnant women should be more frequently examined. If there was a large amount of albumin premature labour was undoubtedly indicated even although the patient seemed to be in apparent health. He mentioned cases in illustration.

Dr. G. F. BLACKER questioned the advisability of interfering with the uterus. There were, in his opinion, three indications: (1) to lessen the reflex excitability of the nervous system; (2) to eliminate the poison, which could be done by venesection, even to the extent of 500 cubic centimetres at a time; and (3) to dilute the poison remaining in the blood which could best be done by the intravenous injection of saline solution up to about 1000 cubic centimetres at a time.

Dr. M. HANDFIELD-JONES expressed himself as being in general agreement with the author of the paper. He referred to a woman in whom three pregnancies were all attended by eclampsia. He emphasised the importance of treating the renal inadequacy which appeared to exist in cases of eclampsia, and in some of these cases the emptying of the uterus might very well be considered before the convulsions supervened. There were enormous differences in the clinical features of the condition. He would certainly not abstain from the operation of inducing labour in all cases, even when in presence of eclampsia.

Dr. HERMAN, in replying, said that his chief object had been to controvert the emphatic statement in the current text-books that when the uterus was emptied the fits ceased. As a prophylactic treatment he fully believed in inducing premature labour when there was much albumin in the urine. In treating the fits bleeding was a good treatment. If labour was induced in presence of convulsions Cæsarean section was undoubtedly the best method.

## HARVEIAN SOCIETY OF LONDON.

*Exhibition of Cases.*

A MEETING of this society was held on March 20th, Mr. W. WATSON CHEYNE, the President, being in the chair.

Mr. E. W. ROUGHTON showed a child, aged seven months, after Operation for Intussusception. Four weeks previously the child was brought to him with the complaint that it had been sick more or less continuously since last Christmas, and that on the previous evening it was taken considerably worse and began to pass blood and slime. Intussusception was at once suspected, and on palpation a small swelling was found above and to the right of the umbilicus. Injection was not resorted to but the abdomen was at once opened and an intussusception of the ileo-cæcal variety was found which had only travelled as far as the hepatic flexure of the colon. It was reduced with ease. Mr. Roughton afterwards noticed that the vermiform appendix presented a bruised appearance, and he accordingly removed it.—The PRESIDENT said that he had taken a fancy to combining the two methods—that of injection and of abdominal section. He opened the abdomen and located the intussusception and then injected fluid slowly per rectum. Then if the fluid did not seem to be doing good the bowel could be brought out and the intussusception removed.

Mr. ROUGHTON showed another case in a child, aged 13 months, who was operated upon at the age of four months when the symptoms had lasted 24 hours. He reduced the intussusception easily except the last two inches, but that occupied a quarter of an hour and was very troublesome.—Dr. W. CAYLEY supported the combined method of reducing

an intussusception. The great drawback to relying upon the older method of reduction by water alone was that it was impossible to tell whether the intussusception had been completely removed.—Dr. LEONARD G. GUTHRIE asked whether Mr. Roughton had had experience of the results of leaving such cases alone. He had met with one case of so-called "nature's cure." A child, aged 15 months, had signs of obstruction lasting for some days. Six months previously there had been pain in the abdomen and the passage of blood and slime. A medical man who was called in told the mother that the bowel had become telescoped and that such cases were best left alone. Some days later the patient passed a gangrenous mass per anum. The child recovered for a time, but later was brought again and operated upon, when there was no trace of either cæcum or vermiform appendix. At the junction of the small and large bowels there was a constricted portion one and a half inches long which was twisted one and a half times on itself. The surgeon dissected that, used a Murphy's button, and sewed the ends together. The child, however, died in a few hours.—Mr. ROUGHTON, in reply, said that he did not propose to try the combined methods mentioned by the President. He had only operated upon three cases of intussusception and they had all recovered. Injection had not been used. He thought the fluid must distend the bowel and that would probably be a greater source of shock than manipulation outside. He did not see why such cases should not recover if operation were done sufficiently early, say within 24 hours.

The PRESIDENT showed a man who had Fractured both Patellæ, one of which had been treated by wiring and the other not, and he remarked that the secret was not to put the leg in a splint but to make the patient walk as soon as possible.

The PRESIDENT also showed a boy who a year ago fell from a parapet, a distance of 20 feet, and Fractured the Left Femur above the Condyles. When seen the lower end of the upper fragment was in the lower part of the popliteal space behind the tibia. Reduction was tried but every time the force was relaxed it shot back again. The application of heavy weights was also tried but without permanent success. Eventually he made a long incision, turned back everything, and exposed the bones. It was found that not only was the femur fractured across but the condyles were down in the joint and the ends of the bones went in between the condyles, separating the two halves. He therefore nailed on the outer side a plate of aluminium, fastening it with silver tacks. The leg was put into a splint and was kept there for a long time because the bone was so thin. For a time the lad had a stiff knee, but he could now bend it to a right angle. The plate was still *in situ*. He found that the use of the plate was an excellent measure in such cases and he had treated several by it. It would be an advantage to have the plate and the nails of the same metal to obviate any possible electric action.

Mr. J. JACKSON CLARKE showed a boy the subject of Severe Spastic Paralysis one year after operation. He had shown the boy before operation and shortly afterwards. The right leg had been particularly stiff but was now more useful, though he still walked plantigrade. There had been a lot of clonic movement, and he performed an elongation of the tendo Achillis on the right leg. Instruments had been left off during the day but were resumed at night. He did not believe that tendon transplantation had been very useful for the condition. He thought that the prognosis after operation in such cases was more hopeful than he had been taught, and than he at one time believed.—Dr. E. CAUTLEY believed that anything which would assist such children to walk would also assist their mental development. He thought that in all cases of spastic paralysis any operation which would enable the patients to stand, and later to walk, should be done, even though the child might not be mentally competent. Once they associated with other children and could play with them the mental and physical development was improved.

Dr. GUTHRIE showed a case of Charcot's Disease in both Hip-joints in a woman, aged 44 years. 12 years ago she had slight pains in the limbs which did not last long. Three years ago they were much worse and of a lancinating character and there was numbness about the soles of the feet. At about that time a sudden swelling arose in the neighbourhood of the right hip but it was painless. But she thought that the bone was out because, she said, she could hear the bones rattle. Six months ago the other hip was similarly affected. The patient had the Argyll-Robertson pupil and the left pupil was larger than the right. Romberg's sign was marked and she had absence of the knee-jerks on both sides.

Dr. GUTHRIE next showed a case of Arrested Growth of the Forearm following Fracture, with Ischæmic Paralysis, in a man, aged 58 years. The condition of Volkmann's ischæmia was of 50 years' duration. At nine years of age the patient fractured both bones of his left forearm and tight bandaging and subsequent ulceration resulted in firm flexion of the wrist when the splints were taken off. The fingers were bent into the palm of the hand and there was no use in the fingers. Operations had since been performed with the view of increasing the length of the contracted tendons. There was a difference of two and a half inches in the measurement of the two sides. The bones of the left forearm were small, infantile in appearance, and delicate. The fingers were dwarfed and stumpy and somewhat glossy. Reaction to faradism could be obtained in both flexors and extensors. The condition had been known to follow the application of Esmarch's bandage. Volkmann thought that the condition was due to a condition similar to rigor mortis produced by stoppage of the circulation, while others were of opinion that it was a purely nervous phenomenon. The previously described cases had been in children and had not been watched long enough.—Mr. RAYMOND JOHNSON and Dr. JAMES TAYLOR took part in the discussion which followed.

## EDINBURGH MEDICO-CHIRURGICAL SOCIETY.

*Exhibition of Cases, a Specimen, and a Lamp for the Treatment of Lupus.*

A SPECIAL clinical meeting of this society was held on March 19th, Professor T. R. FRASER, F.R.S., the President, being in the chair.

Mr. F. M. CAIRD showed (1) a girl after removal of an Intracranial Tumour; and (2) a woman after partial removal of an Intracranial Tumour.

Dr. FRANCIS D. BOYD demonstrated a case of Congenital Paraplegia.

Mr. DAVID WALLACE showed a patient after removal of 44 inches of Tuberculous Intestine.

Dr. W. ALLAN JAMIESON exhibited four interesting cases. The first was a case illustrating the combined features of Lupus Vulgaris and Lupus Erythematosus on the same patch. A country girl, aged 17 years, presented a cluster of nodules arranged in an annular form on the left cheek, conforming generally to the appearance of a patch of lupus vulgaris, but in the centre of the patch was a scaly spot of the size of a pea, the scales having the splintery character of those in lupus erythematosus, and on being removed showing the usual epidermic tags on their under surface. On the right ear near the lobe was a distinct patch of lupus vulgaris. The disease had lasted for a year. The second case was one of Lupus Erythematosus after prolonged treatment by quinine. The patient had been under observation for 16 years but the disease had existed longer. In June, 1900, there were two patches of the size of a crown piece on each cheek, no treatment having had any decided result. The patient was then placed on quinine, five grains three times a day, and up to the end of January, 1902, she had taken in all six ounces. Improvement began at once, and the former diseased area was now a fine scar. She had found out for herself what Unna so strongly insisted on—that dry applications suited best locally. The third case, one of Para-keratosis Variegata (Unna) was one of those which were shown by Dr. Jamieson at the meeting of the British Medical Association in Edinburgh in 1898. Little alteration had taken place since then. There was still the same mottling of the skin, the same smoothness and absence of hair, and the same crimson-red appearance which led Unna to term the cases "red men." The first case which Dr. Jamieson had met with was in a female, many years since. He still regarded the cases as akin to lichen planus. No treatment had produced any result. The fourth case was one of Pityriasis Maculata et Circinata. The patient, a man, aged 40 years, had had a patch of seborrhœic dermatitis of the size of a florin midway between the scapulæ for three years, but a month since a blotch presenting the aspect of pityriasis rosea had appeared on one shoulder and there were now quite a

number of rings and patches studded over the upper arms and deltoid regions. The faint red margin and the fawn centre were conspicuous and offered a contrast to the seborrhœic patch on the back with its greater degree of scaliness and rougher surface.

Mr. C. W. CATHCART showed the following cases:—1. A man whose right arm had been caught between two rollers in a paper factory. He presented every indication of complete paralysis of the brachial plexus as well as complete loss of sensation in the areas supplied by these nerves; not even the intercosto-humeral nerve had escaped. There seemed to be a slight action of the subclavius and the serratus magnus muscles. On making an incision in the neck no trace of the brachial plexus could be found, but merely a mass of scar tissue. The separated ends were so distant that the clavicle was cut through and a graft of the two ends was made. As yet no advantage had resulted from this operation. 2. Mr. Cathcart contrasted the above with a case of partial rupture (the lower cords) of the left brachial plexus in a man, the result of a fall. The eighth cervical nerve and the first dorsal nerve had been ruptured as well as part of the seventh cervical nerve possibly. 3. A man, aged 66 years, who had suffered from a hernia for some time. It had come down on several occasions but had always been replaceable except on this last occasion when it could not be reduced. He was operated on 24 hours after the strangulation had occurred and the bowel was then quite gangrenous. As the patient seemed to be fairly strong the gangrenous part of the bowel was excised and the healthy extremities were at once sutured with silk sutures. Recovery was going on satisfactorily. 4. A child who had fallen and later had developed cerebral symptoms, unconsciousness, fits, restlessness, and dilatation of the pupils. There had been a discharge from the right ear for some time antecedent to the injury but when examined this discharge was mixed with blood. The indications were enough to warrant the opening of the skull in the mastoid region. This was done but no abscess was found. On opening the dura mater, however, much blood-stained fluid escaped, as there had been fracture of the base of the skull. The child at once improved and the case had gone on successfully since. 5. A case of Bazin's Malady in a woman who was first seen in November, 1901, with Multiple Ulcers on the Legs. These were not thought to be syphilitic or tuberculous then and so they were scraped and carbolic acid was applied. Mr. Cathcart expected that they would have healed up at once but in a few days they were found to be again breaking down. The ulcers were treated again still more energetically. Dr. Allan Jamieson was asked to see the case and he diagnosed it as one of Bazin's disease. Mr. Jonathan Hutchinson had described this disease as an intractable form of ulceration most often mistaken for syphilis, but it was probably a tuberculous lesion, though no tubercle bacilli had been found to be present. The case had improved greatly under salicylic and creasote plaster with a later application of ichthyol and zinc plaster.

Dr. BYROM BRAMWELL showed two cases. 1. A man in whom the Stereognostic Sense in the Left Hand was for a time completely lost. He did not know if an article in his pocket were a coin, key, or knife. 2. A case of Bright's Disease in which Marked Diuresis resulted from the administration of boric acid when other diuretics had failed to increase the urinary flow.

Mr. H. ALEXIS THOMSON demonstrated the following cases. 1. A patient, a young man, after Suture of a Penetrating Wound of the Stomach. A gouge had been pushed through the abdominal wall below and to the left of the umbilicus and being directed upwards and backwards had penetrated the anterior wall of the stomach close to the lesser curvature. The case seemed at first trivial as the patient's symptoms were not severe. Later, however, he began to vomit blood and although a probe entered only three-quarters of an inch into the wound it was determined to open the abdomen. On doing so the bowels were found to be covered with blood and an opening allowing the tip of the finger to be passed in was present in the stomach. 2. A man, aged 61 years, after Operation for Irreducible Inguinal Hernia containing a Large Diverticulum from the Urinary Bladder.

Dr. G. A. GIBSON showed two cases. 1. An Aberrant Case of Polyneuritis simulating Landry's Disease. The patient had had no infectious disease since childhood or any accident except a fall on the bridge of a steamer due, Dr. Gibson thought, to the disease and not a cause of it. There was an almost complete paralysis of both lower extremities as well as of the right arm and, to a great extent, the left also. There was a total loss of all reflex phenomena as well as a loss of tone in the muscles which began to waste. There was no diminution in the sensibility but some subjective disturbances, as pain on pressure. There was no reaction of degeneration. 2. A patient with Pyloric Stenosis in whom pyloroplasty had been done by Mr. Cotterill. The patient was 45 years of age and he had suffered from dyspeptic symptoms for three years. About three months previously he had suffered greatly from vomiting and had lost weight rapidly. There was a total absence of free hydrochloric acid in the gastric secretion as well as a great diminution of the total acidity; no lactic acid was present. The stomach reached to one inch below the umbilicus. No peristaltic movements occurred in the gastric walls and splashing easily took place. Examination of the blood showed no pathological leucocytosis. The case was not one of atonic dilatation. Dr. Gibson was inclined to think that it was not a malignant contraction. Mr. Cotterill found it to be a cicatricial contraction of the pyloric opening. The patient had increased nearly one stone in weight since the operation.

Dr. GIBSON also showed a Brain from which a cerebellar tumour had been removed.

Mr. WALLACE showed (for Professor CHIENE) three cases of Injury to the Head. 1. A patient who had received a severe injury to the right side of the head three years ago. The wound was treated and he recovered well at the time, but a year subsequently he developed fits to a very great degree, 180 or so in 24 hours, and even passed into the status epilepticus frequently. Professor Chiene operated, reflecting a large flap, and found the scalp, the dura mater, and the bone all united. These were separated from one another and the patient now felt better and had had no recurrence of the fits. 2. A boy, aged 11 years, who received an injury to the forehead. 10 days subsequently his mental character underwent a change; he quarrelled and fought with his brother and later developed convulsions. This condition continued for a year. At the operation a depression was found, the bone was thickened, and the dura mater was adherent. These were separated and for a time improvement seemed to continue but now this was very doubtful. 3. A patient who received an injury to the left parietal region of the skull 15 weeks previously. There was some paresis of the right arm and leg and operation seemed to be indicated as he was beginning to develop fits.

Dr. NORMAN WALKER demonstrated three cases. 1. A child showing Urticaria Pigmentosa. The yellow raised spots when examined microscopically were seen to consist of Ehrlich's mast cells. The prognosis was that when such patients reached the age of from 18 to 20 years the disease disappeared. 2. A case of Rodent Cancer of the Tip of the Nose in a woman who was treated and cured by arsenious acid. The part so treated sloughed and came away *en masse*. There was a tiny recurrence in this case necessitating a second application but the cure was now complete. 3. A case of Mild Ichthyosis in a boy. This disease was commonly stated to be congenital. As a matter of fact it was not so but was hereditary, commencing at the second year of life. The child was being treated by small doses of thyroid extract.

Dr. JAMIESON demonstrated the new Marshall and Wood's Lamp for the treatment of Lupus by light, which has just been installed in a room set apart for this treatment and for that of lupus and rodent ulcer by the x rays.

## ROYAL ACADEMY OF MEDICINE IN IRELAND.

### SECTION OF MEDICINE.

*Pseudo-elephantiasis.—X Rays in Medical Diagnosis.*

A MEETING of this section was held on March 7th, Sir CHRISTOPHER NIXON, the President, being in the chair.

Dr. WILLIAM J. THOMPSON showed a case of Pseudo-elephantiasis. The patient, a woman, 64 years of age, had been admitted to Jervis-street Hospital, Dublin, a few days previously with an enormously enlarged spleen which extended downwards almost to the crest of the ilium and inwards as far as the umbilicus. Further examination revealed an abnormal condition of the left leg which she had never before shown to anyone or spoken of in any way. It might, Dr. Thompson thought, be classed as a case of pseudo-elephantiasis. Her family history was good, both her parents lived to advanced

ages, neither of them had ever been abroad, and she had never been out of the country. She had always been strong and healthy and had been a domestic servant for 40 years. About 30 years ago she first noticed a swelling in the upper and outer part of the leg, about the region of the great trochanter, which came on very slowly, gradually extended inwards (surrounding the leg) and downwards. This swelling at first was always moist on the surface, so much so that it kept her underclothing damp but, as far as the patient remembered, never stiffened the linen. In about seven years the whole leg down to the ankle was involved. At the time of her change of life, 23 years ago, she had some very severe attacks of uterine hæmorrhage which necessitated her resting in bed and she affirmed that while so resting the swelling in the upper part of the leg commenced to get smaller. She was never married and never had any trouble at her menstrual periods. The leg was at present about the same as it had been for the past 15 years, except that the exudations had stopped and the surface had lately become very dark in colour and quite rough. There were great thickening and enlargement between the knee and the ankle-joint. The measurement at the thickest point was 26 inches, at the same point on the right leg it was only 11½ inches. Since her admission into hospital the swelling had become much softer and less resisting, probably due to the rest in bed. The foot and as far on the ankle as the shoe fitted was scarcely swollen and the swelling above this hung quite over the foot when the patient stood up. From the thigh to the knee the swelling was not nearly so marked; the thickest part measured 24 inches and the measurement at the corresponding point on the opposite leg was 15 inches. Up to the time of her admission she was at work as a cook and had never had any pain. The urine contained no trace of albumin, sugar, or chyle. The woman was pale, thin, and emaciated, and she stated that for the past year she has lost flesh rapidly.—Professor E. J. MCWEENEY remarked that save for a moderate polymorphonuclear leucocytosis and an increase in large hyaline leucocytes of transitional type the blood exhibited no abnormality. He had observed three cases of this kind. In one lymphorrhœa was a prominent feature and the patient, a young man, ultimately died from septic poisoning. The two others were middle-aged men and were treated by amputation. In both cases he had satisfied himself by dissection that the cause of the lymphatic obstruction was chronic tuberculous lymphangitis. The histological features were interesting and comprised immense thickening of the epidermis, especially of the stratum lucidum and coroneum, without thickening of the true skin but with dilatation of the lymph spaces and general œdema. All fibrous structures showed marked overgrowth. The lymphatics were accompanied by streaks of small old infiltration, in which encysted giant cells of tuberculous character were embedded. The skin was about 10 or 12 times as thick as normal skin. In both of these cases he had convinced himself that the pseudo-elephantoid condition was of tuberculous origin and had confirmed his view by discovering the bacilli in one of them.—Sir GEORGE F. DUFFEY stated that not long ago he met with a similar case of pseudo-elephantiasis of both legs in a patient who had formerly suffered from eczema; he ascribed it to chronic lymphangitis excited by eczema. The blood showed nothing abnormal; it was carefully examined for filaria but none were found.—Mr. R. F. TOBIN said that some years ago he met with a case of the disease. The importunity of the patient induced him to tie the femoral artery of the side affected, but the operation, which he performed contrary to his own opinion, did no good.

Dr. J. MAGEE FINNY and Dr. E. J. M. WATSON gave details of cases illustrating the use of the X Rays in the Diagnosis of Intra-thoracic Tumours. Dr. Finny claimed for the x rays a great utility in clearing up the doubts which must attend such cases as regards (*a*) the presence of a new growth or an aneurysm, (*b*) the pulsatile or non-pulsatile nature of the tremor, and (*c*) the exact position and dimensions of the tumour. He also submitted skiagrams which Dr. Watson had taken of three cases which occurred in 1901. Case 1 was an example of sarcoma of the right lung which occurred in a woman, aged 30 years, whose illness commenced with hæmoptysis. When admitted under Dr. Finny's care in Sir Patrick Dun's Hospital in February, 1901, the right side of the thorax was apparently full of fluid and was opaque to the x rays, so that no information was at that time afforded. Something more serious than pleural effusion was suspected because the right mamma and the subcutaneous tissue of the right side were thick and œdematous and the veins were varicose with a downward blood-stream. After 72 ounces of serum, clear and free from inflammatory or other morbid products, had been withdrawn, Dr. Watson took the skiagram now exhibited, and it was then evident that a tumour existed in front of, and to the right of, the vertebral column occupying more than three-fourths of the lung space below the level of the fourth rib and extending to within a short distance above the diaphragm. Although the tapping gave relief to the dyspnœa and some of the other symptoms, the solid œdema, the varicosity of the veins, and the other evidences of intra-thoracic pressure did not disappear, but rather increased, causing cyanosis and dysphagia, and the patient died at home four and a half months subsequently in an attack of breathlessness. No necropsy was obtainable. The disease was primary, and, considering the age of the patient, it was presumably sarcomatous and had its origin in the connective tissue of the glands in the posterior mediastinum. Cases 2 and 3 were examples of aneurysm of the aorta occurring in adult males, aged 42 and 54 years respectively; the first was an aneurysm of the arch, the latter was an aneurysm of the descending thoracic aorta. In Case 2 the x rays showed that the sac was much larger than physical examination could determine and extended quite as much to the left as to the right of the middle line. In Case 3 the x rays showed a very distinct shadow in the region of the aorta, above the heart, extending well to the left side, and, more than that, the tumour was seen by the screen to be distinctly pulsatile, enlarging with each systole of the heart. In both cases a modified Tufnell treatment was adopted and iodide of potassium was administered for five to seven weeks and both patients left hospital greatly benefited as regards relief from pain.

Dr. W. S. HAUGHTON read a paper on the Use of the X Rays in Medical Diagnosis. He said that in his opinion x-ray examination in chest cases would eventually come into very general use. Before describing his method of examination he stated that the fluorescent screen was preferable to photography because cardiac movements disturbed the lung a good deal and although respiratory movements could be avoided by very short exposures the heart movements always spoiled the photographic result.—Dr. T. P. C. KIRKPATRICK, Dr. LANE JOYNT, and the PRESIDENT took part in the subsequent discussions.

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HUNTERIAN SOCIETY.—An ordinary meeting of this society was held on March 12th, Dr. A. L. Galabin being in the chair.—Dr. Galabin delivered a Presidential address on the Annual Variation of Puerperal Fever compared with that of some Allied Diseases.—Dr. R. Hingston Fox read notes of a case of Vaccinia with a Generalised Eruption simulating Small-pox. A vigorous young man, aged 26 years, a student, was vaccinated with glycerinated calf-lymph. Two fellow-students vaccinated at the same time had ordinary vesicles without further symptoms. In the case under notice the vesicles were rather large; the area of redness around was about three inches in diameter. Upon the ninth day of vaccination he felt unwell. On the next day there was more malaise, but only slight, general pain. On the eleventh day he complained of sore spots on his back and kept his bed. The temperature was 102·6° F. and the pulse was 112. He was flushed, with furred tongue but not much prostration; the fauces were very red and swollen but no spots were visible on the palate. There was an eruption of spots at the root of the neck, chiefly about the inner end of the right clavicle, three or four more over both scapular regions, and a few indefinite papules about the nates, the right patella, and on the face. Those about the root of the neck, and especially two or three of those on the back, were quite indistinguishable from the pocks of variola, having a central hard pustule not collapsing on puncture and a red areola. On the next day the temperature was normal and the spots had slightly receded, the little pustules drying up and no fresh ones appearing. After this he quickly became well. On the twenty-fourth day of vaccination the spots were still present, consisting of a small central scab little raised above the surface of the skin and slight areola. The diagnosis presented at first much difficulty. The slight prodromata, the fewness of the spots, and the distribution, entirely avoiding the face, wrists, and ankles, were against small-pox. On the other hand, several of the pocks were exactly like those of variola, and it was thought possible that it might be that disease, greatly modified by the co-existence of active

vaccinia. A few days showed that it was only vaccinia with a generalised eruption. Dr. Hingston Fox went on to refer to the records of generalised vaccinia, pointing out the various forms: accessary vesicles around the primary ones; pocks elsewhere from accidental auto-inoculation; and a truly generalised rash as in this case. Acland had described it as "vaccinal eruptive fever," the eruption appearing from the fourth to the tenth day. The distribution was irregular. Recent cases described by Dr. Morrow, Dr. T. Colcott Fox, and Dr. W. T. Freeman showed implication of the whole skin-surface, upper limbs, and upper half of the trunk, and wrists alone respectively; but the face, mucous membranes, palms, and soles were scarcely ever affected. The irregular location, the multiform character of the rash, with quickly-maturing vesicles, and the slight prodromata and malaise, served to establish the diagnosis. In some cases the eruption had followed ingestion of vaccine lymph by the digestive system; in others an irritable state of the skin, congested by pyrexia, or broken in its continuity by dermatitis, seemed to be the cause. In the present case probably the catarrh of the fauces with pyrexia had determined the outbreak of the eruption and its distribution had been influenced by friction. In the often difficult diagnosis of modified small-pox it was well to bear in mind the occasional occurrence of generalised vaccinia.—Dr. Denning quoted a case where the patient had gone into the country from London in which pocks appeared, pronounced to be those of small-pox, 16 days after a successful vaccination.—Mr. F. R. Humphreys said that he had seen a case where a vaccination spot appeared under the clavicle and a rash on the face.—Mr. John Adams said that for a rash to appear after vaccination was a not unlikely thing. He had met with marked cases of vaccinia rash. These appeared frequently about the neck and vaccination was unlikely to take after a patient had been infected with small-pox, but he had known a child to be well vaccinated after four days' exposure to infection of small-pox who a little later developed small-pox. The malaise after vaccination after 20 years of age was considerable and seemed greater in revaccination than in primary vaccination. A great distinction between variola pocks and those of vaccinia was the constant size of the former and the variable size of the latter. Inoculation of vaccinia by swallowing seemed to be unlikely.—Mr. E. Carnall mentioned a type of rash after vaccination which was confined to the arms and face; it was not glazed and was short-lived.—Mr. F. J. P. Daly said that there were three types of rashes appearing after vaccination: papules over the back of the wrist, a pustular form, and an erythematous eruption scattered all over the skin, except on the face and hands, disappearing in a week.—Dr. Hingston Fox thought that Mr. Humphreys's case was a self-inoculated one and that Dr. Denning's case was one of small pox.—Dr. John Adams quoted a case of a vaccinated child who had slept with a case of virulent small-pox.—Dr. W. A. Milligan showed a case of Paget's Disease. The patient was a woman, aged 52 years, who had married at 39 years of age, and had a child at the age of 40 years, whom she had suckled for 10 months. Menstruation left her suddenly at 45 years, and during the time from suckling the child up to 12 months previously the only thing that troubled her was a milky discharge every now and again. 12 months previously the left breast began to itch, and then the nipple became red and slightly ulcerated: it scabbed over but never healed. The redness gradually spread down over the whole areola which presented a raised brawny appearance. The breast gradually got more and more painful. When examined six weeks previously an enlarged gland was found in the axilla, but there was no definite involvement of gland tissue. Microscopic examination of the scrapings showed the presence of psorospermia.—Mr. J. H. Targett considered that the presence of psoros-perms completed the case, but he did not think that they were the cause of the disease.

LIVERPOOL MEDICAL INSTITUTION.—A meeting of the Pathological and Microscopical Section of this institution was held on March 20th, Dr. W. B. Warrington being in the chair. (Dr. J. Barr occupied the chair during the later part of the meeting.)—Dr. Arthur Wallace showed a specimen of Tuberculosis of the Body of the Uterus removed by vaginal hysterectomy from a married woman, aged 40 years. The endometrium was chiefly affected, but the disease had also extended into the muscular layer. There was no evidence of tuberculosis in any other part of the body, so that the condition was probably the rare one of primary corporeal tuberculosis.—Mr. J. P. Martin showed a Hydrocephalic Brain from a boy, aged one and a half years. The circumference of the head was 23 inches and the weight of the brain was 17 ounces.—Dr. Warrington showed a specimen of Tubercle connected with a Small Artery in the Sylvian Fissure in a case of Tuberculous Meningitis. In the cerebro-spinal fluid withdrawn by lumbar puncture from the case lymphocytes were numerous but there was no other type of leucocyte.—Dr. Warrington also showed a specimen of blood from a typical case of Pernicious Anæmia. Megaloblasts were present but few in number, and also red cells with many granular particles deeply stained with methylene blue; these were regarded as degenerating megaloblasts.—Dr. R. J. Ewart showed specimens from cases of Bronchiectasis and Atrophy of the Cerebellum.—Dr. Warrington, Dr. A. J. Campbell, and Dr. A. S. F. Grünbaum took part in the discussion on the various specimens.—Dr. E. E. Glynn read a paper entitled, "Bacterial Investigations of the Water of Public Swimming Baths." He had directed his attention to the following points: (1) the total number of bacteria present in the water of the first-class and second-class baths at the beginning and end of the day; (2) the number and nature of the pathogenic organisms present; and (3) the source of the organisms. Samples of water were taken in sterilised flasks and plated on agar within an hour of leaving the bath; these plates were incubated at 37° C. and the number of bacteria present in a cubic centimetre of the bath-water was estimated. The colon bacillus was demonstrated by the method of Dr. McConkey—i.e., culture on bile salt agar. The majority of the observations were made at baths which were filled with fresh water every morning always derived from the same source. This water was practically sterile, containing less than three bacteria per cubic centimetre. An hour after the baths were opened the water gave 46 bacteria per cubic centimetre; these were derived mainly from the air and the walls of the baths, as a series of experiments showed that at the temperature of the baths (21° C.) the organisms concerned—i.e., those which grew on agar at 37° C.—did not multiply to any considerable extent. During the eight hours of the night the number of bacteria therefore rose from three to 46 per cubic centimetre; if this rate of increase were maintained at 9 P.M. the number should be about 200 per cubic centimetre. The examination of the water in the first-class plunge bath at 9 P.M. on five different occasions during the months of June and July gave an average of 4676 bacteria per cubic centimetre, the average number of bathers being 292; samples collected in the second-class bath on three occasions contained an average of 11,970 per cubic centimetre, the average number of bathers being 186. A calculation based on the capacity of the baths showed that the water removed from the skin and hair of each bather contained between 4,000,000,000 and 6,000,000,000 bacteria, excluding moulds and others which did not grow at 37° C. One source of pollution of the bath arose from a tiled corridor, about four feet wide, running round between the edge and the dressing-boxes; on this both the bathers and those waiting to bathe walked, with the result that soon after opening this was more or less muddy. To avoid this a bath should have two corridors—an inner one between the bath and the boxes and another outside the boxes, the latter being open back and front. With regard to the organisms discovered in the water streptococci were never found and staphylococcus aureus and citreus very rarely; staphylococcus albus was abundant in three varieties—pyogenes albus, epidermidis albus, and cereus albus. Bacillus coli was present in the bath at the end of the day to the number of eight per litre for each bather in the first-class and 48 for each bather in the second-class. Probably typhoid fever was never contracted in baths such as those investigated and the swallowing of water of the type analysed was quite innocuous. Various complaints had from time to time been ascribed to infection in baths but with doubtful accuracy; some who bathed constantly in the open complained of lassitude after swimming in a public bath; this could not be due to the quality of the water, but to its temperature and to defective ventilation. Liverpool was peculiarly fortunate in the number of its baths and the excellence of the water supplied to them.—In the discussion which followed the following speakers took part: Dr. W. Permewan, Dr. Barr, Dr. E. L. Anderson, Dr. Grünbaum, Dr. Matthews, Dr. Kelly, Dr. T. B. Grimsdale, and Dr. Bennett.

CHILDHOOD SOCIETY.—A meeting of this society was held on March 20th, Dr. James Kerr being in the chair.—Dr. Arthur Newsholme read a paper on the Lower Limit of

Age for School Attendance: a Plea for the Exclusion of Children under Five years of age from Public Elementary Schools. Statistics were presented showing that in England and Wales 10·9 per cent. of the total school-children at all ages were under five years of age, 10·2 per cent. were between five and six years of age, and only 4·7 per cent. were over 13 years of age. Remarks quoted from official publications of the Board of Education showed that the proportion at the lower ages was expected to increase still further. The chief reasons for this increased attendance of children under five years of age, the age at which compulsory attendance began, were the desire of mothers belonging to the labouring classes to be enabled by this means to go out to daily work and the corresponding desire on the part of school authorities to prevent girls in higher standards being kept from school to help in nursing children under five years of age. Educationally there was no gain by commencing school work so early; it was, in fact, injurious to the brain and to the eyesight. That there was no educational gain was shown by the comparative experience of England and Scotland. In the former country 10·9 per cent. and in the latter 2·2 per cent. of the total children on the school register were under five years of age; in the former 33 per cent. and in the latter 21 per cent. were under seven years of age, but the Scottish population was no worse educated than the English. School attendance of children under five years of age constituted a waste of public money, for at a low estimate £900,000 were spent annually on it—money which might otherwise be spent on keeping children at school from 14 to 15 years of age and on technical training. Moreover, such school attendance increased the prevalence of, and fatality from, infectious diseases. The death-rate from the common infectious diseases, such as measles, whooping-cough, scarlet fever, and diphtheria, rapidly decreased with every additional year of life. Hence the importance of delaying attacks of each disease until the first five years of life were passed, for by this means thousands of lives might be saved. Crèches did not cause spread of infection to the same extent as did elementary schools because the number in each was usually smaller and more personal supervision could be exercised. The necessities of mothers who must go out to daily work could be better met otherwise than by sending their babies to public elementary schools. If the families in a single street arranged a crèche on a plan of mutual management the risks of the importation of "foreign" infection would be greatly minimised. The difficulties in the provision of an alternative scheme were not a sufficient argument in favour of the continued attendance at school of children under five years of age, in view of the facts that this presented no educational advantage, that it was inimical to the physical and mental health of the children, that it cost nearly a million sterling annually, and that it caused an enormous annual death-toll from preventable diseases.

SOUTH-WEST LONDON MEDICAL SOCIETY.—A meeting of this society was held on March 12th, Mr. John Gay, the President, being in the chair.—Mr. F. F. Burghard read a paper on the Treatment of Urethral Stricture. He divided cases of urethral stricture into those due (1) to simple stricture without cystitis and retention; (2) to stricture with cystitis; and (3) to stricture with retention, and gave a brief account of their pathology and the positions of the strictures. He then showed several kinds of catheters and bougies and explained their appropriate uses, and described a new form of steriliser for soft catheters which consisted of an oblong metal box fitted with trays, the lower tray having some layers of gauze on it for sprinkling a powder composed of tri-oxymethylene which evaporated gradually and permeated the catheters without injuring them. He said that all metal instruments should be boiled, preferably just before use, and suggested that ointments for lubricating instruments should be kept in collapsible tubes. He did not think it possible to render the urethra aseptic without causing a great deal of irritation, to which patients would not submit. For the treatment of an uncomplicated or simple stricture the patient should be recumbent on a hard couch and the surgeon should try to pass a No. 8 or No. 9 non-metal catheter or bougie to see where the stricture was situated. If it failed to pass then a smaller size should be taken until one entered the bladder; a great point was to avoid drawing blood. Supposing that a No. 2 instrument passed it should be left in for a minute, during which time the next size should be got ready and passed directly the other one was removed in order to take the urethra off its guard. This should be repeated with the next size and so on until a No. 6 was reached, when it was advisable to stop. The patient should come again after an interval of 10 days and should then, if possible, have his urethra dilated up to No. 12, metal instruments being used this time. Then his visits to the surgeon should be at increasing intervals to have instruments passed. Mr. Burghard did not consider that there was any advantage in passing instruments daily in increasing sizes and thought that the passing of several instruments successively at one sitting was less likely to irritate the urethra. He did not like using the small-sized metal instruments, as they were more likely to damage the urethra. If there was a false passage an instrument might be left in it and an attempt made to pass another instrument along the side of it. In very sensitive and bleeding urethras he advised the injection of a solution of eucaine and suprarenal extract. In stricture with retention if a catheter could not be passed the bladder should be aspirated above the pubes—if necessary more than once—and repeated trials to pass a catheter should be made.—Several members took part in the discussion which followed.

SOCIETY OF ANÆSTHETISTS.—A meeting of this society took place on March 7th, Mr. Walter Tyrrell, the President, being in the chair.—Dr. Silk gave his experiences of a trial of a "Modified Form of Schleich's Anæsthetic Mixture" brought before the society last year by Dr. Probyn-Williams, Mr. Harold Barnard, and Dr. Howard. Dr. Silk had employed the mixture 91 times. He found that the average time required to induce anæsthesia—viz., from five to eight minutes—compared favourably with that of the A.C.E. mixture and that rather more of the petroleum mixture was used up than would be required of the A.C.E. mixture in a corresponding time. He had frequently found that the patients struggled a good deal, exhibiting a tendency to opisthotonos. He (Dr. Silk) did not find that the anæsthetic was a depressant usually, but on several occasions it had been markedly so. He had noticed on several occasions a very free flow of saliva.—Mr. Willett brought forward a case in which a patient having had gas and oxygen for a few minutes remained practically Asleep for Four Days.—In answer to Dr. Harold Low Mr. Willett said that he did not think the patient was malingering.—The President said that this case reminded him of a case in which gas and oxygen had been administered to a woman for eight minutes, the administration being followed by a most prolonged faint.—Mr. H. J. Paterson gave notes of a case in which gas and oxygen had been given for 135 minutes for an operation for varicose veins, the subsequent recovery from the anæsthetic being rapid and complete.—Dr. W. J. McCardie (Birmingham) read notes of three cases that had been brought to his notice where the patients had died during anæsthesia in consequence of fæcal vomit entering the trachea during operation for the relief of acute intestinal obstruction.—Mr. Carter Braine read a short communication on the Slowing of the Pulse under Chloroform. He cited a case where the pulse fell after 25 minutes to 32 beats per minute, the pulse rapidly recovering on the substitution of ether for chloroform.—Mr. Carter Braine also showed an apparatus for preserving the posture of patients during operations on the kidney.—The President, Dr. Probyn-Williams, Dr. Belfrage, and other members of the society present referred to cases of interest and took part in the discussion.

FOLKESTONE MEDICAL SOCIETY.—A meeting of this society was held on March 7th, Dr. T. Eastes, the President, being in the chair.—The President deplored the loss which the society had sustained by the sudden death of Dr. C. Latter and proposed that a vote of sympathy should be sent to Mrs. Latter.—The President then proposed a hearty vote of thanks to Dr. W. J. Tyson for the efficient way in which he had carried out the duties of President during the last three years.—Dr. P. V. Dodd proposed a vote of thanks to the President for consenting to fill the vacancy on the staff at the Victoria Hospital.—Dr. Edward Norton then read a paper on the Inebriates Acts, 1879-99, in their Relation to Inebriety. Dr. Norton dealt first with the history of the Acts and showed that the Act of 1879 was permissive in character and regulated the establishment of retreats for voluntary patients. The amended Act of 1899 was a distinct advance, for it introduced compulsion in the treatment of criminal drunkards and established reformatories for their detention. The advantages of retreats and institution treatment were then discussed, an especial point being the watching the disease

(inebriety) in its manifold forms. The period of time recommended was to be at least 12 months, as shorter periods were not to be relied upon for prolonged cases. During the quinquennial period ending 1884 there was a yearly average of three retreats and 71 patients annually admitted thereto, whereas in 1900 alone there were 20 licensed retreats and 422 patients admitted for treatment. After 20 years' experience this maintained advance was the strongest evidence of utility and sufficient proof that retreats were meeting the requirements of an increasing demand for institution treatment and control of inebriates.—An animated discussion followed in which the President, Dr. A. E. Larking, Mr. W. F. Chambers, Dr. P. G. Lewis, and others took part, and Dr. Norton replied.

PATHOLOGICAL SOCIETY OF MANCHESTER.—A meeting of this society was held on March 19th, Mr. J. Collier, the President, being in the chair.—Dr. W. Walter showed a Solid Tumour of the Right Ovary removed from a multipara, aged 39 years. The pedicle was fleshy and vascular. When drawing the tumour through the abdominal incision the fingers penetrated the capsule which was friable over a small area where the tumour was soft like putty and of a pink colour. The other ovary was atrophied and there was no ascites. On section the tumour was seen to be of the consistence of a pear, yellowish-white in colour, with a pink streak in the centre. Microscopically the stroma of the ovary was found to be extensively infiltrated with round cells resembling closely in appearance a sarcoma testis, but the arrangement of the cells permitted the possibility of a carcinomatous origin.—Dr. T. P. Cowen and Dr. J. Orr described a case of Syringomyelia with symptoms of Progressive Muscular Atrophy only, without Sensory Symptoms or Spastic Paralysis. The spinal cord was wasted and softened in its upper half. There were two cavities in the grey commissure surrounded by gliomatous tissue extending from the first cervical segment to the upper lumbar segments. The anterior one was the real central canal and was partially obliterated for almost its whole length but with occasional dilatations. The posterior one—a large cavity—had enlarged by gliomatosis and softening so as to invade almost the whole of the grey matter, especially in the mid-cervical and dorsal regions. There were marked ascending and descending degenerations.—Dr. Moore showed two specimens of Unsymmetrical Kidney and he referred to compensatory hypertrophy of the kidney.—Dr. W. M. Smith (Leeds) showed two Ovarian Tumours removed by operation.

# Reviews and Notices of Books.

*Selected Essays and Monographs, chiefly from English Sources* (BRAXTON HICKS, BODINGTON, HODGKIN, PAGET, HUMPHRY, EHLERS). With Obituary Notice of the Society's late Treasurer, Dr. W. Sedgwick Saunders. London: The New Sydenham Society. Vol. clxxiii. 325 pages text, 6 pages Report.

IT is announced in the preface to the present volume that it has been decided during the next five years to spend the funds of the New Sydenham Society almost entirely in the publication of a "Clinical Atlas of Illustrations of Disease," to abstain from undertaking the translation of any large works, and to refrain almost entirely from reprinting the works of English authors. In this volume, which will therefore be for a time at least the last of its kind, there are several monographs which are of interest chiefly from the historical point of view, and amongst these are three papers by Sir James Paget, one by Sir George Humphry, and Dr. Hodgkin's original article which contained the first description of the disease with which his name is associated. The collected papers of Dr. Braxton Hicks are presumably published in this volume chiefly with a view to place on permanent record in a readily accessible form some original work which might otherwise have been scattered abroad. The monographs of Sir James Paget are on Symmetry and Disease, on Disease of the Nipple, and on Osteitis Deformans It is not too much to say that these papers will prove of permanent interest. Sir George Humphry's note is on a case of Unilateral Hypertrophy of the Gums associated with other abnormalities, chiefly hypertrophic and unilateral. This brief article may well serve to show the younger surgeons of to-day the way in which such a paper should be written.

The most interesting of the contents of the volume appear to us to be the reprint of Dr. Bodington's pamphlet on the Cure of Consumption and Dr. Ehlers's History of Danish Lazar-houses in the Middle Ages. George Bodington was born at about the beginning of the last century, was educated at Magdalen College School, Oxford, was apprenticed to a surgeon at the age of 17 years, afterwards became a student at St. Bartholomew's Hospital, took the licence of the Society of Apothecaries in 1825, and immediately went into practice at Birmingham. He afterwards removed to Sutton Coldfield, Warwickshire, devoted most of his life to the treatment of the insane, and took considerable interest in the local affairs of the borough in which he lived. He was endowed with a large measure of common-sense and was a fearless writer. His chief title to fame is to be found in the paper which is contained in the present volume, and is due to the fact that he strongly insisted on the importance of fresh air at a time when the balance of medical opinion was directly opposed to its use and when physicians of the greatest respectability took every available means to keep it from consumptive patients who would have been the most benefited by its inhalation. "One mode of treatment prevailing," says Dr. Bodington, "consists in shutting the patients up in a close room, to exclude as far as possible the atmospheric air, and thus forcing them to breathe over and over again the same foul air contaminated with the diseased effluvia of their own persons." This, he maintained, was a treatment founded on the most erroneous principles, and "more deserving of reprobation than is even the apathetic indifference and desperate hopelessness generally entertained with regard to this disease." He goes on to condemn strongly the exhibition of tartarised antimony—"a fashionable medicine" and "a most destructive one." "Patients seldom long survive the use of this medicine when administered freely if the disease is much advanced unless an antidote to the poison be timely given." Dr. Bodington taught that "the most important remedial agent in the cure of consumption" was the free inhalation of a pure atmosphere—not "the impure air of a close room ..... but the air out of doors, early in the morning." Patients should walk if they could, otherwise "riding or carriage exercise should be employed." Dr. Bodington says that "the surest way in which a successful treatment can be arrived at by the medical man is by the reception under his own roof of the consumptive patient"—if the sanitary conditions of his house happen to be suitable. Special consideration is given to the sleeping-room which should be cool, airy, and properly ventilated. Dr. Bodington's paper did not revolutionise the practice of his time; it probably did not receive the attention it deserved. Its teaching, however, is well in accord with the present "mode."

Dr. Edward Ehlers's article on the Danish Lazar-houses in the Middle Ages contains a very large collection of miscellaneous information derived from various sources. In its present form it gives the reader the sort of pleasure which is to be derived from looking over a number of antiquarian notes in their natural form before they have been finally classified and digested. The article has three illustrations, one showing a Medical Visitation of a Leper (Strasburg, 1535), Satan striking Job with Leprosy (same date), and a Leper with his Rattle, from Franklin's "Vie Privée d'Autrefois, Hygiène," of which the original source is not stated. The title of Dr. Ehlers's article is a little misleading, for less than half of it is devoted to Danish lazar-houses. It is

divided into two parts, of which the first deals with European lazar-houses at large (pp. 241–279), and the second with the subject mentioned in the title (pp. 279–301), to which are appended (pp 301–312) copies of very interesting documents bearing on the matter (for example, an ordinance by Archbishop Birger of Upsala (1367–83) and a decree of King John of Denmark (1492) relating to litigation which was going on between the rector of Naestved and the lepers). The first part of the article treats of Monastic Hospitals, the laws in force which bore on isolation, the conditions of admission to the hospitals, and details concerning medical visitation. Particulars are given as to the exclusion of the leper from general society and of the prohibitions under which he was placed. The sources of revenue of the lazar-houses are given in some detail. In a few places the lepers were periodically visited, and in consequence of complaints King John of Denmark ordered that a monthly inspection should be held. The houses had strict regulations as to Divine service, as to the duties of the resident functionaries, and as to their food-supply. By far the most interesting part of the article is that which is devoted to the lazar hospitals of Denmark, of which Dr. Ehlers has collected information concerning no less than twenty-four. As far as we are aware these facts are now brought together for the first time, and as the sources of information are by no means readily accessible to English readers they owe to the author a debt of gratitude for the work he has done for them, and no one who has been engaged in such a research can fail to appreciate the enormous amount of time and trouble which it entails. Dr. Ehlers's paper alone would make the volume a valuable possession.

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*Quain's Dictionary of Medicine by Various Writers.* Third Edition, largely re-written and revised throughout. With 14 Coloured Plates and numerous other Illustrations. Edited by H. MONTAGUE MURRAY, M.D., F.R.C.P. Lond., Joint Lecturer on Medicine, Charing Cross Medical School, and Physician to Out-patients, Charing Cross Hospital; Senior Physician to the Victoria Hospital for Children, Chelsea, and to the Foundling Hospital. Assisted by JOHN HAROLD, M.B., B.Ch., B.A.O. R.U.I., Physician to St. John's and St. Elizabeth's Hospital and Demonstrator of Medicine at Charing Cross Medical School; and W. CECIL BOSANQUET, M.A., M.D. Oxon., M.R.C.P. Lond., Physician to Out-patients, Victoria Hospital for Children, Chelsea, and Pathologist to Charing Cross Hospital; late Fellow of New College, Oxford. London and Bombay: Longmans, Green, and Co. 1902. Pp. 1892. Price 21*s.* net.

ON the appearance of the first edition of Quain's Dictionary of Medicine in November, 1882, we gave such a long and appreciative notice of it as seemed to us to be warranted by its importance and merits.[1] A second edition in two volumes was published in June, 1894, and we remarked in an annotation on the fact that its appearance had been the literary event of the week and that 33,000 copies of the first edition of Quain's Dictionary of Medicine had been sold in this country, the colonies, and America. The year 1902 brings with it the publication under new editorship of a third edition in one large volume.

We might fairly apply to the work in question an almost stereotyped formula of reviewers under such circumstances and say that a book which had met with such a success as Quain's Dictionary of Medicine had fully justified its existence and that it stood in no need of expressions of approval or of words of commendation. And no doubt this is so, but it is nevertheless satisfactory to find a new edition of a popular work more than maintaining its position and fulfilling its intended purpose under the conditions of newly-made researches and additions to our knowledge, new contributors, and a new editorship. It is difficult to define, but easy to recognise, how much of the success, usefulness, and value of a work of this kind, which includes the whole range of medicine must depend in the first place upon a wise selection of contributors who can speak with an authority which is the outcome of knowledge and experience and, in the second place, upon a discriminating use of the material which fresh researches and new methods of medical and scientific inquiry are bringing to light. The discovery of new facts tends to alter the relative position and perspective of older truths and calls for the exercise of no little judgment and the sense of proportion on the part of those who would make a faithful and up-to-date picture of disease. In these respects we can speak very highly of the way in which the work of the Dictionary has been carried out. It is impossible, of course, to deal adequately with a work of this nature unless the reviewer has practically unlimited space and also unlimited time and leisure at his disposal. What we have done has been to read the excellent and pleasantly written editorial preface by Dr. H. Montague Murray, to glance through the list of contributors, and to sample the book, as it were, by selecting here and there such articles for perusal or reference as had most interest for us, or about which we specially desired information, and to refer to those subjects to the knowledge of which some fresh additions have been made since 1894 when the second edition appeared.

Dr. Murray tells us that, although the general scheme of the book as designed by the late Sir Richard Quain and his assistant editors has been preserved, some departure from the original plan has been found necessary. Notwithstanding that a number of new articles have been added and many others have been re-written, the Dictionary is now published in one volume. The recent and ever-increasing incursions of surgery into the realms of medicine have received recognition and more space has been allotted to "special branches." The editor takes the opportunity of thanking the contributors generally and the assistant editors in particular for their aid, and he gracefully alludes to the part played by the publishers in inserting numerous plates and illustrations and in otherwise making the volume what it is.

Turning over the long list of contributors we find the names of some of the best and most representative authorities in medicine, which afford a guarantee of the quality of the articles contributed by them. To the various contributions the signatures of their writers are appended. Among the articles which we have selected as samples we may mention those relating to Aneurysm (in which we notice that the latest treatment advocated by Lancereaux and Paulisco of the injection of sterilised solution of gelatin is referred to), Angina Pectoris, Antagonism, Antitoxins, Aphasia, Appendix Vermiformis, Bacteria, Beri-beri, Brain, Chemical Examination of the Blood and its Morbid Conditions (two articles), Bright's Disease, Cancer, Diphtheria, Filariasis, Malarial Disease, Malignant Pustule, Pain in Visceral Disease, Phthisis, Roentgen Rays, and Typhoid Fever.

Speaking generally of this edition of Quain's Dictionary of Medicine, we may say that it is a wonderfully comprehensive encyclopædic work. It is well illustrated and well arranged for facility of reference and the practitioner and student of medicine will assuredly find it of great practical value as a trustworthy and available book for the purpose alike of guidance and ready reference in the diagnosis and treatment of disease.

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*William Hunter—Anatomist, Physician, Obstetrician (1718–1783).* With Notices of his Friends Smellie, Fothergill, and Baillie. By R. HINGSTON FOX, M.D. Brux., M.R.C.P. Lond. London: H. K. Lewis. 1901. Price 4*s.* 6*d.* net.

FEW lives are more full of interest than that of Dr. William Hunter, and Dr. Fox has devoted very considerable

[1] Vide THE LANCET, Nov. 18th, 1882, and Jan. 6th, 1883.

time to the study of it and of its relation to the advancement of medical education and science. But apart from the great individuality and charm of William Hunter, his relation to the men and events of his time makes his life one of high interest. The friend of such men as Cullen, Smellie, Matthew Baillie, Fothergill, and Heberden in his own profession, and of Hume and Burke outside it, must always figure largely in any history of the eighteenth century—certainly in any medical account of it. William Hunter was one of the first and best teachers of anatomy and of other branches of medical sciences. He foreshadowed some of the ideas of Darwin at the very root of the theory of evolution. He was a worthy brother of John Hunter and sufficiently near to him in genius and in merit to contest with him the claim to anatomical discoveries and scientific methods. He greatly advanced the obstetric art, but was conservative enough to dislike the forceps, for, and with, which his friend Smellie had done so much. Dr. Fox has contrived his narrative so as to give it great general, as well as medical, interest.

## LIBRARY TABLE.

*Failures in Vegetarianism.* By EUSTACE H. MILES, M.A., formerly Scholar of King's College; Honours Coach at Cambridge University; Amateur Champion of the World at Tennis; Author of "How to Prepare Essays," "A History of Rome up to 500 A.D." London: Swan Sonnenschein and Co. 1902. Pp. 202. Price 3*s.*—It appears from the modest title-page of Mr. Miles's book that he is a scholar with many accomplishments and a writer on many subjects. A brief citation only has been given above of the books which the author has written and of the championships which he has won. But it must suffice. Mr. Miles dislikes the term "vegetarian" and attacks vegetarians. According to him their statements are dogmatic, they themselves are afflicted with petulance, and the food which they eat is unpleasant to the taste and indigestible. Vegetarian diet is usually deficient in proteids. Vegetarian restaurants should have more proteid and less pastry. A valuable suggestion is given. In his parting advice to vegetarians Mr. Miles says: "In each restaurant you ought to have a table of approximate food values and of the approximate amount of food said to be needed by the average person." This would elevate feeding from a fine art to an exact science. The hungry observer would weigh himself on entering the restaurant, and by working out a simple rule-of-three sum would determine how much more or less he ought to require than the "average person." He would then study the table of "food values" and would order his meal in accordance with the scientific principles of Voigt or of Atwater. It may be hoped that as a result of Mr. Miles's sagacious teaching the science of dietetics will advance, especially as he believes greatly in the experimental method. He regrets that "holidays are almost the only chance that we have for experimenting." They should not, he thinks, be used merely for the purpose of laying up a store of health. "Why not rest the stomach for a while, and therefore rest the nerves?" We regret to say that fasting in our experience does not invariably conduce to a restful state of the nervous system—contrariwise.

*Hazell's Annual for 1902.* Edited by W. PALMER, B.A. London: Hazell, Watson, and Viney. Price 3*s.* 6*d.*—This encyclopædic record of the men and topics of the day appears this year for the seventeenth time and grows steadily more cosmopolitan in character. The alphabetical arrangement of the contents greatly adds to the convenience of consulting the annual, while the fulness of the cross-references curtails waste of time in looking up subjects under numerous headings. The subjects of the little biographies have been well chosen. Additions to this branch of the work could always be suggested as well as subtractions, but on the whole the names included are those concerning whom the greatest number of readers are likely to require information, while the information given is succinct and to the point. New articles will be found upon the armies, the navies, the trade, and the governing individuals of all important foreign countries, the editor rightly considering—on the principle of the schoolboy who wrote "My duty to my neighbour is to keep my eye on him"—that we all ought to be familiar in these days of quick inter-communication and commercial rivalry with the doings of other nationalities. We have nothing but praise for an excellent compilation which we consult frequently in our daily work.

*The Practical Nursing of Infants and Children.* By FRANK COLE MADDEN, M.B., B.S. Melb., F.R.C.S. Eng. London: Cassell and Co. 1901. Pp. 287, crown 8vo.—The idea of this book is to indicate the main outlines of the practical nursing of the sick child and to explain in some detail the principal duties that a nurse may be called upon to perform. It is divided into two parts—medical and surgical—and the author enters in considerable detail into the many conditions that may be met with in the wards of a children's hospital. The advice given is, upon the whole, trustworthy and sufficient. The least satisfactory paragraphs are those upon the feeding of infants. All those who are interested in, and have to deal with, the nursing of young children may read the book with considerable advantage.

*A Short Manual for Monthly Nurses.* By CHARLES J. CULLINGWORTH, M.D. Durh., F.R.C.P. Lond. Fifth edition. Revised with the assistance of M. H. ATKINSON, matron of the General Lying-in Hospital, London. London: J. & A. Churchill. 1901. Pp. 96. Price 1*s.* 6*d.*—This well-known little book has reached its fifth edition and it is hardly necessary for us therefore to do more than to mention the fact. It is intended for those who have already received a general training as nurses and contains only an account of the special duties of a monthly nurse. It has been carefully revised and brought up to date and is an excellent example of the type of book required for the purpose. We have no doubt that the present edition will be as successful as the preceding ones.

*A Short Practice of Midwifery for Nurses.* By HENRY JELLETT, B.A., M.D. Dub. With 67 Illustrations and an Appendix. London: J. & A. Churchill. 1901. Pp. 345. Price 6*s.*—This book is a revised edition of the author's "Short Practice of Midwifery" in which parts that are unsuitable or unnecessary for nurses have been eliminated and matter has been added which is superfluous in a book for students. It is always difficult to attempt to write a book which will be suitable both for nurses and students. The result as a rule has all the disadvantages of a compromise. It is not less difficult to adapt a book which is intended for students and nurses for the use of midwifery nurses alone. Dr. Jellett has succeeded more or less, but we are inclined to think that the book is a little too advanced for nurses and that it is not written in a sufficiently succinct or clear style. One of the most important qualifications for a successful midwifery nurse is that she should be well acquainted with the principles of the successful feeding of infants. It would be quite impossible for any nurse to acquire this knowledge from Dr. Jellett's book. The section upon this subject is most inadequate. It deals almost entirely with feeding by graduated or modified milk—a purely special subject which is quite unsuited for the ordinary nurse—and does not contain any information at all upon the simplest elements of successful artificial feeding. The directions which are given are more suitable for the guidance of a mixer in a milk laboratory than for an ordinary nurse or even for a student.

*Principles and Conditions of Artificial Feeding of Infants.* By W. B. CHEADLE, M.A., M.D. Cantab., F.R.C.P. Lond. Fifth edition. Edited and revised by F. J. POYNTON, M.D., M.R.C.P. Lond. London: Smith, Elder, and Co. 1901. Pp. 268. Crown 8vo. Price 5s.—Dr. Cheadle's lectures have so long been a classic upon the subject of the feeding of infants that it is not surprising to find that a fifth edition has been issued. In the preparation of this new edition the author has had the assistance of Dr. Poynton. The chief additions that have been made are a section upon the use of modified or graduated milk, and more detailed notes upon the establishment of artificial feeding, dilatation of the stomach, and acholia. Since this book was first issued several competitors have made their appearance. Dr. Cheadle's large experience enables him, however, to speak with an authority which is of great weight, and he sets forth his views upon the difficult subject of the feeding of infants in no uncertain manner. The book has not suffered in any way from its revision and still retains all the interest and freshness of the original. While we may not agree with all the views which are expressed—and with regard to the value of asses' milk, the use of artificial foods in combination with cow's milk, and the habitual use of bicarbonate of soda there may well be two opinions—yet if we are to disagree our arguments would have to be carefully weighed in view of the well-established and scientific rules upon which the whole of the book is based. It should be carefully read by everyone who has to supervise the feeding of young infants.

## JOURNALS AND MAGAZINES.

THE *Medical Magazine* for March gives the report of the Statistical Committee of the Metropolitan Asylums Board on the completed cases of small-pox treated in the hospitals of the Board for 1901. The facts and figures if condensed and put into a form easy of appreciation by the lay reader would make a valuable contribution towards the public education in the matter of vaccination. Such facts as the complete immunity, except when revaccination had not been practised, of upwards of 300 nurses and servants in close association hourly with small-pox patients would appeal very likely even to the most prejudiced mind. Dr. S. D. Clippingdale compares the advantages of the clay and gravel soils of London and decides contrarily to usual opinion in favour of clay. So many other factors, however, are concerned in the healthiness of a residential neighbourhood that a person may be led to conclude that the clay districts may provide a less heavy death-rate in spite of, rather than in consequence of, the soil upon which habitations there are built. An abstract of a lecture by Professor von Bunge on the feeding of infants affords some interesting figures showing the relationship between the rate of growth of a young animal and the amount of albumin in the nourishment supplied by its mother. He is no believer apparently in the efficiency of cow's milk as a substitute for suckling in the case of the human infant. Dr. Nathan Raw's paper upon Consumption concludes with an account of the admirable activity of the Liverpool Corporation in the matters of sanatoriums and of proper isolation of consumptive out-patients.

## THE PLUMBERS' REGISTRATION BILL.

THERE is unquestionably a consensus of public, official, and professional opinion that it is desirable to bring men doing plumbers' work under statutory control in view of the bearing of this work on the health of the public. In 1892 the British Medical Association presented a petition to Parliament through Sir Lyon Playfair to this effect. It is to be hoped that the amended Bill which has just passed the House of Lords will meet with an equally favourable reception in the House of Commons. The Bill in its amended form merely seeks permission for a council consisting of 14 members to submit a scheme to Parliament for the Registration of Plumbers. The Council is to be composed as follows: three members elected by the Local Government Board; two by the National Association of Master Plumbers of Great Britain and Ireland; two by the Operative Plumbers' Association of Great Britain and Ireland; two by the County Council Association[1]; two by the Municipal Corporation Association[1]; one by the Royal Institute of British Architects; one by the City and Guilds of London Institute; and one by the Worshipful Company of Plumbers. It is evident that the Bill will meet with strong opposition from some whose practices, it is to be feared, are in a measure responsible for the abuses which the Bill seeks to avert. From the public health standpoint it is a matter of indifference whether the operative is employed by a master plumber, a builder, an ironmonger, or a linendraper, provided that the man's competency is assured and that he is made responsible, say by marking his work, to some governing body other than his trade master. It would be desirable also to register the employer but the varied interests of those employing men engaged in plumbers' work renders the registration of many of these persons a somewhat complex question. Where an architect supervises the work there is a reasonable hope that his competency in matters of sanitation is assured by his diploma from the institute. There are, however, thousands of operatives at work throughout the country who if not left to their own resources are under the guidance of men whose ostensible avocation gives but little guarantee of their ability in this direction.

One trade journal has become greatly excited at the prospect of the Registration Bill becoming law. That this alarm is shared by any large section of the trade represented by the journal in question is extremely doubtful. There is possibly a limited number who would, it is to be hoped, in time feel the effects of the measure. These men at present supply so-called sanitary appliances and fittings of the flimsiest description to the "jerry builder" *made to sell* at the lowest possible price. Some, more particularly in the country, send out gas-fitters, coppersmiths, and tinmen to dabble with the ofttimes important duties of the plumber. To those in the trade who employ competent men the fact of getting their men registered cannot do otherwise than increase the confidence of the public in those who employ them. It is a matter for regret that a mistaken view of the narrow issues of a trade interest should outweigh among a certain section their zeal for the public good. A petition has been circulated by the journal in question for signature among the ironmongers throughout the country asking Parliament to reject this Registration Bill and requesting that pressure shall be put upon local Members of Parliament to vote against the measure. The reasons advanced in the petition for so doing are quite inadequate and in view of the importance of the measure in the interest of the public health it is to be hoped that these efforts will prove unsuccessful. One objection, No. 4, is that the Bill if passed will be useless—why is not stated. No. 5 is that it is unnecessary. This in view of the existing death-rate from certain preventable diseases attributable to bad plumbing is unfortunately contrary to facts. Objection No. 7 sounds a note of caution and seems to suspect some latent wickedness on the part of the Plumbers' Company, the members of which, it is feared, are fostering the Bill for their private ends. Such innuendos are absolute nonsense. There is no reason that the Bill should be regarded with suspicion because the Worshipful Company of Plumbers possesses sufficient vitality to do its duty and to prefer spending time and money in promoting the best interests of the trade which it represents and the public good instead of in feasting. Finally, Objection No. 8 laments that the City and Guilds of London Institute is to have but one member on the council. At all events, it will enjoy the same representation as will the Institute of British Architects and the Worshipful Company of Plumbers who are, it must be admitted, both competent and interested parties. Why the City and Guilds of London Institute should be more largely represented is not clear, unless, indeed, it is that they are credited with having helped to wreck the former Registration Bill. As already stated, we consider the Bill worthy of all support.

[1] It is probable that medical officers of health would be elected to represent these bodies.

# THE LANCET.

*LONDON: SATURDAY, MARCH 29, 1902.*


## The New Royal Warrant for the Army Medical Service.

WE publish on page 912 the new Royal Warrant for the Army Medical Service. When the report of Mr. BRODRICK'S Committee on the Reorganisation of the Army Medical Service appeared it was met with a fierce fire of adverse criticism. That there were many points in the report which lent themselves to such criticism and about which grave misgivings naturally arose cannot be doubted. For example, Mr. BRODRICK did not appoint any army medical officer of long experience and high rank to serve on the committee. This was unquestionably, in our opinion, a bad omission. But we ventured to remind our readers of the fact that the document was, after all, only a report, that many of the objections to it, some of which were sufficiently obvious, might be fairly expected to disappear upon a more detailed consideration of a confessedly immature scheme, and that it might be well, before entering upon any course which threatened to arrest all further efforts, to wait until something more was known about the scheme and the intentions of the Government in regard to it. The subject is notoriously a very difficult and complicated one; it has given rise to a long controversy between the Army Medical Service and various Governments; it is one which requires to be approached with honesty of endeavour and purpose and to be dealt with in a broad and comprehensive spirit. That the Secretary of State for War and the members of the committee were earnestly desirous of placing the Army Medical Service on a satisfactory footing, of bringing it into close relations with the medical profession in civil life, and of encouraging medical officers in the pursuit of their scientific and purely professional work, cannot, we think, be doubted. The names of the distinguished men in the civil branch of the profession who were members of Mr. BRODRICK'S Committee, some of whom had had experience of war in South Africa and to all of whom the requirements of the profession might safely be entrusted, formed a sufficient guarantee of the aim and object that they had in view. Where they were likely to fail, and where it has been alleged that they did fail, was in respect of knowledge of the army and in technical matters relating to the Army Medical Services.

In reading the Royal Warrant which we publish to-day it should be borne in mind that there are some projects forming part of the scheme of reorganisation of the Army Medical Service which will probably be hereafter developed and carried into effect, but which, being foreign to the Royal Warrant, do not find any place in it. We allude to such matters as, for instance, the provision of an army medical school and hospital in London and the organisation of an army sanitary department for field service—the absence of such a department being at present a weak point in our system. The main features of the new Warrant are such, we think, as might have been anticipated by readers of THE LANCET. It will be seen that, speaking generally, what was good in the recommendations of the report of Mr. BRODRICK'S Committee has been adopted and what was otherwise has been altered or modified in the warrant. The Warrant is a lengthy and complicated document which requires time for careful study and we trust that it will receive such study in a conciliatory spirit. It may not contain all that has been justly asked for by the Army Medical Service, but it is a distinct step forward. Speaking generally, and taking the Warrant as a whole and in connexion with the place which the Director-General will now occupy on the War Office Council, on the Army Board, and on the Advisory Board as its President, it must be admitted that the Army Medical Service has made a great and important stride in advance. This Warrant should improve it both in regard to its position as a branch of the army and in respect of the power and influence which it may assuredly hope to exercise in the future.

To take some of the more salient features of the Warrant it will be seen that the Director-General is given an increase of army rank and an increase of pay. The post is henceforth to be held for three years instead of for seven as heretofore, but its tenure is capable of being extended to five years. The pay of medical officers is increased; provision is made for special pay and charge pay; the door is opened for scientific and professional study and for professional merit and distinction; promotion is very largely by selection; due provision is made for promotion to brevet rank and for distinguished service; and retirement at 20 years on £1 a day, as we always supposed would be the case, remains unaffected. Nothing is said about India, which is a very important point, considering the number of medical officers serving there and the grievance in regard to the pay of the junior ranks, but that is presumably because the Indian Government has not yet made up its mind on the subject. The Army Medical Service having long laboured under many disadvantages and its work in South Africa having been very unjustly belittled and discredited, it will take, we fear, a little time under any circumstances to recover its popularity. But we may, in conclusion, repeat our opinion that the Warrant is, speaking generally, a good one; and it only remains to be seen whether it will prove promptly to be an attractive one.

## Radcliffe *v.* Price.

THE case of RADCLIFFE *v.* PRICE recently decided in the Chancery Division is one of considerable interest to the medical profession. The plaintiffs, executors of Mrs. EMILY DOWLING who died on March 23rd, 1900, sought to recover from Dr. ALFRED F. PRICE who had for 11 years been the medical attendant of the deceased three sums of £500, £100, and £200 given by her to him during 1899 and 1900. Mrs. DOWLING died at the age of 80 years, leaving property

stated to have amounted to £90,000. This she inherited from her first husband, and by her will she appears to have provided for her second husband, to have made gifts to her relatives, who were in humble circumstances, and to have given her property at Bromley, where she lived, for a museum and public garden, besides making large gifts to charities. Various other sums had been paid by her at different times to Dr. PRICE—such as £90 for Guy's Hospital, £100 for the Soldiers' and Sailors' Home, and £312 15s. for professional services, but the three sums amounting to £800, the subject of the suit, had been paid more recently than these, and were paid as gifts to their recipient. The executors made no charge of fraud or improper conduct against Dr. PRICE in respect of these three sums but claimed that the relations of medical attendant and patient existed between the parties and that in the absence of independent advice obtained by the donor a presumption of influence existed and that such gifts would not stand. Dr. PRICE gave a full explanation of the circumstances in which the gifts were made. The largest sum, £500, was a free gift, partly in recognition of his exceptional services as medical attendant and partly in recognition of his consent to accept the office and discharge the duties of a trustee of the institution to be founded at Bromley as a memorial of the donor's first husband. Of the other sums £100 constituted a Christmas present and the sum of £200 was given for the purpose of replacing a brougham and harness which had been injured in an accident. Mr. Justice SWINFEN EADY gave judgment in favour of the plaintiffs, ordering the repayment of the £800 to the executors with costs, saying in the course of his judgment that he saw no reason for restricting the principle involved to cases where the relations between the giver and the receiver of the gift arose out of business management, this being the view of the law which Dr. PRICE's counsel urged.

The principle of equity to which the learned judge gave effect is no new one. It may have arisen in times when the minds of wealthy persons were more likely to be subjected to those of the persons about them than they are now—when, for example, ministers of religion had more power to alarm dying sinners, or when medicine and surgery were not always free from claims to mysterious powers which they did not possess. In more modern times, however, the principle has still been well recognised. It was stated nearly a hundred years ago in an eloquent and learned argument by Sir SAMUEL ROMILLY in these terms: "The relief stands upon a general principle applying to all the variety of relations in which dominion may be exercised by one person over another."[1] This was said in a case in which a clergyman had obtained considerable influence over a widow lady and managed her affairs as her agent. The widow made a settlement of a considerable proportion of her property upon the clergyman and afterwards, having married again, sued with her second husband and caused the settlement to be set aside. In another well-known case the recipient of the gift was a surgeon.[2] This gentleman after the death of a patient produced an agreement whereby the deceased, a man of the age of 86 years, promised to pay him £25,000 for medical and surgical assistance during the rest of his life. This agreement was set aside. In other cases solicitors have figured as claiming to receive or to retain presents from clients who have given them without having independent advice to guide them in the matter.

That the courts of equity have been right in setting aside gifts made in such cases as those we have referred to few will be found to gainsay. The position of clergyman, legal adviser, or medical adviser must not be made use of in order to reap gain wholly disproportionate to the services rendered. The instances which we have cited, however, and most of those which have come before the courts, have differed very considerably from the case of Dr. PRICE. The presents which he received formed but an inconsiderable fraction of the admitted wealth of his patient. They were given to him in the ordinary form of cheques which he was able to cash at once, so that the gift was complete when made, and did not wait to take effect until the patient's death. There was no shadow of suspicion that he had asked for them to be made to him or had suggested in any way that any remuneration beyond the ordinary settlement of his account would be acceptable or possible. There can be no doubt that the services rendered by a medical man often deserve a higher remuneration than they receive and Dr. PRICE's professional qualifications are unexceptionable. In his case, therefore, if in any, a gift made freely even without independent advice, and without subsequent ratification after restoration to health, might with justice be allowed to stand. At the same time we cannot help feeling that Dr. PRICE acted imprudently, though no doubt with the imprudence of conscious integrity, in accepting the cheques given to him without question. It is often prudent to ask the advice of an independent person in unusual circumstances, and such gifts as those bestowed by Mrs. DOWLING upon Dr. PRICE are unusual though not unprecedented. The advice of any disinterested person of experience consulted would almost necessarily have been, "See that someone connected with your patient knows what she is doing, so that no suspicion may arise that you influenced her in the matter, or so that no one can allege that there has been any secrecy." Had Dr. PRICE adopted this course he would not only have been able to retain money to which he had every moral right but he would have been spared the unpleasant ordeal of publicity. We think Dr. PRICE has been dealt with hardly in the matter of costs. Surely, as the whole contention arose from the acts of the testatrix it would have been only fair that the costs of the proceedings should have been borne by the fund in dispute.

We see no reason why a patient's gratitude to his medical adviser should not exceed the mere fees by which the latter can claim reward for his attendance. The sympathy and skill of a medical adviser may be but inadequately rewarded by such fees and far less than the clergyman or the solicitor has he any opportunity of using even the smallest influence over his patient's disposal of his property. In France the matter is provided for by the 909th section of the Civil Code which forbids a medical practitioner or a druggist who has treated a person in his last and fatal

[1] Huguenin v. Baseley, 14 Vesey, 275.
[2] Dent v. Bennett, 4 Myline and Craig, 269.

illness to profit by a gift *inter vivos* or by a testamentary disposition made during the course of the illness. By a coincidence the letter of our Paris correspondent this week informs us that an attempt is at the present time being made to get rid of this article of the code. Our correspondent gives the reasons urged in favour of the alteration but does not prophesy that the proposal of Dr. DELARUE will ultimately be accepted by the Chamber of Deputies. Our own view as to the matter, so far as it concerns both English and French practitioners, is that where no evidence whatever of fraud or influence exists a rule that influence should be presumed whenever a patient has shown unusual or even excessive gratitude towards his medical attendant is unjust to the medical profession and demands some modification. The particular lesson of the case of DOWLING *v.* PRICE for medical men is, however, that in the present state of the law no exceptional gifts should be received from patients save upon the advice of an independent third person of good standing or with the knowledge of the patient's family.

## Dr. Copeman's Work on Variola and Vaccinia.

A BARE statement of fact given in answer to a carefully-framed question may be as misleading to a neutral observer as an actual mis-statement. And not only to a neutral observer, for even the man who gives the answer may be unable to see the construction that it can be made to bear. The framing of questions that will elicit from honest men misleading answers afterwards to be used for special purposes has now become a fine, or, at any rate, a carefully cultivated, art. The gentlemen who frame these questions do not always put them themselves, but they take care that they shall be propounded at the psychological moment and under sufficiently dramatic conditions. The *suggestio falsi* in an apparently straightforward question is easily arranged and unless the latent mischief is exposed irreparable damage may follow, especially if those who answer the question fail to see the snare that is laid for them. Many of those who read the reports of questions asked and answers given thereto in the House of Commons on Thursday, March 20th, would imagine that Dr. MONCKTON COPEMAN, taking advantage of his position as a Local Government Board inspector and of the present outbreak of small-pox, had hastily passed small-pox virus through monkeys and calves and had then inoculated children with this material, carrying out a series of inoculation experiments without knowing exactly what would happen. We refer our readers to our Parliamentary report.

How far does such a supposition fall in with the facts of the case? In a series of papers published between August, 1891, and May, 1894, several of which will be found in our columns, Dr. COPEMAN has recorded a number of experiments carried out by himself with the object of determining whether monkeys can be successfully "inoculated" with small-pox virus, with humanised vaccine lymph, and with calf vaccine lymph. He found that animals inoculated with any one of these lymphs became immunised, not only against the special lymph used, but also against both of the others—that they were all "interprotective." Going a step further, he corroborated the statements, made by over 20 other observers during the period 1801–1892, that small-pox virus can, when introduced into calves, set up a condition which at first resembles small-pox fairly closely. If, however, the virus obtained from the first calf be passed through a second, and the virus from this through a third, and so on, it very rapidly becomes so far modified that it can no longer set up infection or contagion in the ordinary fashion: only when introduced into the system through a disturbed epithelial surface can it set up any definite symptoms, and then the changes and reactions, both local and constitutional, are indistinguishable from those resulting from the use of ordinary calf vaccine lymph. The virus has now become transformed into vaccine. Dr. COPEMAN pointed out that from JENNER onwards those who have studied the nature of vaccinia most thoroughly are of opinion "that cow-pox represents merely a modification of human small-pox brought about by residence in the tissues of the cow." We have in vaccinia, in fact, simply an example of attenuation or modification of the activity of a pathogenic organism of which PASTEUR and his school have given so many manifestations. Dr. C. L. HAGCIUS of Geneva has given an account of no less than eight successful series of experiments, in each of which a strain of variolous lymph, obtained in the first instance from the human being, was carried on from calf to calf through, in some instances, as many as six or seven removes. The general result was that by the second, or at most the third, remove the effect produced was altogether indistinguishable from that which we were accustomed to see in a calf which has been successfully vaccinated. With the lymph of the fifth or sixth remove a number of previously unprotected children were vaccinated with unfailing success. The resulting vesicles could in no way be distinguished from ordinary vaccination vesicles of equal age.

Other observers have arrived at exactly the same conclusions. The non-transmissibility of vaccinia by the ordinary channels through which small-pox is conveyed, the modification of the whole condition both as regards its constitutional and local manifestations, the distinct protective power still remaining, all appear to point to the fact that altered variola is now a true vaccinia. Dr. COPEMAN, seeing the importance of these observations, especially when taken in connexion with his own experiments, looked to the small-pox virus as modified and attenuated by passage through bovine animals for his future supply of effective vaccine lymph. The fear that the old strain of lymph should die out or be lost by accident can be faced with equanimity, for we know that the old can always be replaced by a new strain, not less effective but probably more so. Bearing these facts in mind most medical men at any rate must regret that the question asked by Mr. CORRIE GRANT in the House of Commons should have been so imperfectly and infelicitously answered. We regret that Mr. LONG did not think it worth while to state Dr. COPEMAN'S position in the matter accurately.

## Progress with the London Water Bill.

IT is evidently the wish of the Government that the London Water Bill should be proceeded with as rapidly

as possible. On Friday, March 21st, Earl WALDEGRAVE brought forward two separate motions in regard to the appointment of five Members of the House of Lords to join with the Committee to be appointed by the House of Commons for the consideration of the Bill. The first motion was that such a committee should be appointed; the second had reference to its constitution. Both motions "were agreed to forthwith," the Members appointed being Lord BALFOUR of BURLEIGH, Viscount LLANDAFF, the Earl of CREWE, the Earl of HARROWBY, and Lord LUDLOW.

Lord BALFOUR, it will be remembered, was chairman of the Royal Commission "appointed to inquire into the water-supply of the metropolis" which began its labours on May 16th, 1892, sat at intervals between that date and June 30th 1893, and reported before the end of that year. The subject, therefore, is not a new one to his lordship and it may be hoped that by this time he has realised to some extent how much the Commission over which he presided was misled by evidence which it heard and which has since been proved to be untrue.[1] Lord LLANDAFF again is thoroughly acquainted with the details of the London water-supply. The subject was apparently a new one to him when he was appointed chairman to the Royal Commission with which his name is now associated. Fortunately, the late Major-General SCOTT, who was also on the Commission, was able, by means of sagacious questions, to clear up many matters which would otherwise have been left in a state of obscurity, and Lord LLANDAFF's penetrating intelligence very quickly gauged the value of the evidence tendered. Unlike Lord BALFOUR, he did not always receive meekly the word of experts and, to cite an example, in the case of a diagram submitted by an eminent chemist he called it misleading.[2] Lord LLANDAFF should be a most valuable member of the Committee, especially as he realised that although there were before the Commission two contending parties—the London County Council and the water companies—no one represented the water consumers or the ratepayers. Two of the five members appointed to the Select Committee by the House of Lords have therefore a more or less intimate acquaintance with the questions on which they are called upon to advise, while Lord CREWE has had opportunities of showing himself to be a man of ability. We are not without hope that the members appointed by the House of Lords to consider the London Water Bill with the Committee of the House of Commons will infuse practical wisdom into their joint counsels.

On the same day as that on which the Lords appointed their Committee Mr. LONG in the House of Commons moved "that the resolution of the House of the 3rd day of March relative to the London Water Bill which was ordered to be communicated to the Lords and the message from the Lords on the 13th day of March signifying their concurrence in the said resolution be read; that the London Water Bill be committed to a Select Committee of five Members to be nominated by the Committee of Selection to be joined with a Committee of the Lords; that all petitions against the Bill already presented in the House or deposited in the Private Bill Office on or before March 25th, 1902, be referred to the Committee; that the petitioners praying to be heard by themselves, their counsel, or agents, or witnesses be heard against the Bill; that the Committee have power to send for persons, papers, and records; that three form a quorum." In the course of the debate which followed Sir F. DIXON-HARTLAND, Mr. LOUGH, and others insisted that the time allowed for presenting petitions against the Bill was not reasonably long. The shortness of the time certainly pressed hardly on the metropolitan borough authorities which represent the ratepayers and it may have led to the exclusion of important evidence. This consideration, it is to be hoped, will serve to awaken the London water consumers to the position in which they stand. They were for a very short time awakened some months ago by the monstrous proposals of the water companies in regard to fittings and as a result they obtained their way. The present occasion, however, is one of very much greater importance, but its urgency appears to escape recognition.

[1] Report of THE LANCET Special Commission on the Metropolitan Water-supply, THE LANCET, July 21st, 1900, p. 181.

[2] "The diagram, so far as it conveyed any results, conveyed misleading results." Forty-fourth sitting of the Royal Commission on the London Water-supply, from the shorthand notes.

# Annotations.

"Ne quid nimis."

## THE USE OF SPECTACLES IN THE ARMY.

A REGULATION of considerable importance was published in the Army Orders issued by the War Office on March 1st, 1902. It is headed, "Officers and Soldiers wearing Spectacles," and it briefly states that officers and soldiers of the regular forces are permitted to wear spectacles or glasses on or off duty. "This order does not apply to [perhaps the word used should have been *abrogate*] the eyesight tests of candidates for commissions and recruits on enlistment." As a matter of fact, we believe that officers have always been allowed to wear glasses in the field, but the authorities appear to have thought that the rank and file could see sufficiently well to render them independent of any artificial aid. The present war has, however, demonstrated that a soldier may see very well for all ordinary purposes but that when it is important to recognise a man or horse at the distance of half a mile or more and to aim accurately at a moving object any marksman is placed at a great disadvantage whose vision is even to a slight extent defective, though he may have passed all the tests demanded by the medical board. In the armies of the continent the men as well as the officers may often be seen wearing glasses and there seems to be no reason why permission to use them should not be granted except that if broken or lost they are not easily replaced when on active service—an objection that can be met by either requiring the soldier to carry with him a pair of suitable glasses in reserve or to have a few pairs (and a very few would suffice) amongst the regimental stores. The difference in the shooting of a man who is moderately short-sighted, say to two dioptres, with and without correcting glasses is immense. The permission given to the soldier to use glasses is a wise and prudent regulation and, we doubt not, will be thoroughly appreciated by all those to whom spectacles are necessary to give clear vision at any considerable distance.

## THE DISTRIBUTION OF PLAGUE.

DURING the week ending March 16th 12 cases of plague and 7 deaths from the disease have occurred throughout all Egypt. 1 case and 1 death occurred at Tantah; 1 case at

Nahtal near Zifteh, 6 cases and 3 deaths at Koum-el-Nour, and 4 cases and 3 deaths at Deshneh in the province of Keneh. All these cases occurred among the native population. As regards The Mauritius a telegram from the Governor, received at the Colonial Office on March 21st, states that for the week ending March 20th there were 6 cases of plague, of which 3 proved fatal.

## VACCINATION DIFFICULTIES.

VACCINATION seems to have the faculty of raising almost as bitter and bigoted controversy as religion. We have on previous occasions referred to vaccination difficulties, notably at Helston in Cornwall,[1] and now a somewhat similar story comes from Great Yarmouth. The public vaccinator is Dr. Henry Blake and he, finding his work growing very heavy, wrote to the Local Government Board asking that in view of the many persons who wished to be vaccinated or revaccinated, and in view of the fact that the Yarmouth Fair and the Easter holidays were approaching, which events would bring numbers of people into the town, he might be granted leave to employ assistants. The Local Government Board thereupon sent Dr. Blake's letter to the guardians, accompanied by a covering letter stating the wish of the Board that the guardians should confer with Dr. Blake and should intimate the result to the Board. The guardians were much annoyed at this and at the fortnightly meeting held on March 18th there was a heated debate, in the course of which the fatuous theory was trotted out that anybody who was vaccinated by the public vaccinator ought to be considered as a pauper. The guardians finally decided that they would not confer with Dr. Blake, so now the matter rests with the Local Government Board. Undoubtedly it takes a great deal to move a Government Department, but when once set in motion it is extremely unpleasant for anything which opposes its course. The Yarmouth Guardians should remember the fate which overtook their Leicester brethren.

## THE TOBACCO WAR FROM A HYGIENIC STANDPOINT.

WHATEVER may be the explanation as to why smoking in the form of cigarettes has become so enormously popular during the past decade, there can be no denying that popularity from the fact that it has led to a very sharp industrial war. Millions of public money have been invested in cigarette-making companies. Cigarettes are the subject of advertisement in the daily papers on an enormous scale utterly incomparable with that on which tobacco and cigars are advertised. The reason is not far to seek: the cigarette is cheap, and, more than that, it is a convenient form of "smoke." The good cigar is not cheap, it is comparatively bulky, and it takes some time to finish. The pipe must be kept clean, it requires to be filled, and a pouch must be carried to contain the tobacco. The cigarette is ready to smoke, scores can be carried in the pocket, and one can be smoked in a snatched quarter of an hour. The cigarette is therefore popular probably mainly because of its convenience. That being so it is important to consider whether cigarette-smoking is more injurious from the point of view of health than is the smoking of a cigar or a pipe. To begin with, a much milder tobacco can be smoked in the cigarette than in the pipe, and so far this fact is in favour of the cigarette. The usually mild tobacco in the cigarette is "hot" in the pipe. The cigarette is practically in direct contact with the air from the lighted end to the mouthpiece, and thus the smoke is invariably cool, while the products of combustion are calculated to be complete. The pipe, on the other hand, is more like a retort in which, to some extent, destructive distillation with the formation of acrid oils is set up. One very strong objection to the cigarette, however, is that the area of combustion is very close to the nose and mouth and thus air is constantly and invariably inhaled containing smoke from the lighted end which is usually of a very pungent type, infinitely more pungent than is the smoke drawn through the cigarette. Much of the mischief from cigarette-smoking arises from this fact, the cigarette being persistently held in the mouth until burning of the lips is threatened. If the smoke from the burning tip of a cigarette be purposely inhaled for a time a sense of stupor sets in, while the smoke drawn through the cigarette may be breathed in the same way with comparative impunity. The same result is obtained with the cigar but in a still more emphatic way. The use of the cigarette- or cigar-holder is therefore calculated to obviate two sources of mischief—the inhalation of the powerful pungent smoke from the lighted end and the introduction of tobacco juice and oils into the mouth. A long and cleanly-kept pipe filled with mild tobacco preserves the smoker against both contingencies. When, however, the cigarette is rationally smoked, and not to excess, it is probably the mildest form of smoking, and this fact, coupled with its convenience and cheapness, is a sufficient reason for its immense popularity. And it is interesting to note that the tobacco war arose, not on account of the pipe or the cigar, but because of the cigarette.

## THE HISTORY OF PTOMAINES.

LAST week (p. 841) under the heading of "Looking Back," we published a short note taken from THE LANCET of March 21st, 1824, which is, perhaps, the first instance recorded of wholesale ptomaine poisoning. The note was as follows:—

*Danger of Smoked Provisions.*

M. G. KERNER, a physician at Stutgard, has just discovered a new species of poison proceeding from smoked provisions; it appears, from experiments which he has made, that such provisions become subject to a species of decomposition, which renders them poisonous. Sausages made with liver are most liable to it, and the decomposition generally takes place towards the middle of April. Doctor KERNER has ascertained that of 72 persons in a district of Wurtemburg, who partook of smoked sausages, 37 died in a short time, and the others continued ill for a longer or shorter period.—*Ibid.*[1]

The date of the publication of this note would appear to be nearly 50 years previously to the actual announcement that veritable organic toxic alkaloids analogous to those of vegetable origin and of definite chemical composition were evolved during the process of putrefactive decomposition. That the poison of an aqueous extract of decomposed animal matter was of a chemical nature was, however, shown by the Danish chemist Panum in 1855, while in 1822 Gaspard and Stick had detected a venomous principle in cadaverous extracts. To Selmi we owe the name of "ptomaines," he having recognised that there were definite substances formed during putrefaction. In 1877 he concluded that these substances were bacterial products. Owing to the researches of Selmi, of Armand Gautier, and others ptomaines have been relegated to a distinct class belonging in the main to amines of the fatty acid series. Thus, definite substances have been extracted from putrid fish, meat, liver, cheese, albumin, and so on. The outbreak of illness referred to in THE LANCET in 1824 was probably what is now known as "botulism," which frequently occurs in those parts of Germany where raw ham and raw sausage are most widely eaten. Liver sausage is a fertile source of ptomaine poisoning. Sausage poisoning would appear to be due to the toxin of the bacillus botulinus which, as some investigators hold, is related in chemical composition to the toxins of diphtheria and tetanus. The toxin produces all the symptoms of sausage poisoning. It would appear that the smoking process does not inhibit the growth of the organism or the elaboration of ptomaines

[1] THE LANCET, March 15th (p. 761) and 22nd (p. 836), 1902.

[1] Gazette de Santé, Feb. 25th.

unless it may be that the sausage was infected before the smoking process had been started.

## STANDARD BEER.

THERE can be no doubt that the only effectual way of dealing with modern subtleties in regard to tampering with food and drink is to set up standards. Evidence in favour of this method accrues day by day. For a long time the adoption of a legal standard for milk was resisted, but in August last limits in regard to fat and non-fatty solids were fixed by law and the result has been a very material improvement in the quality of the milk-supply. In the same way a standard is required for butter that we may recognise once for all what is genuine butter as distinct from watered butter. Mr. Hanbury has promised to deal with this matter. Again, the new Beer Bill provides a definite beer standard: (1) it must contain not less than 85 per cent. of malted barley; (2) hop substitutes are to be totally prohibited; and (3) foreign-brewed beer is only to be sold with a declaration to the purchaser that it is "imported" beer. The Excise will control the sale of such standard beer, so that it may be hoped that in future nothing but what is practically pure beer will reach the consumer. The fact that the Excise authorities will examine the beer at the breweries should secure this result, while the same step will render the subsequent watering of the beer by the retailer easy of detection. The Bill seems to us to be a healthy compromise between the pure beer party on the one hand and the "substitute" party on the other, the latter urging that the absolute prohibition of substitutes would expose them to severe competition. Another point is that a small proportion of substitute renders the beer rapidly brilliant. From the point of view of the public the Bill, we think, is, on the whole, sound, for should it become law those whose tastes are in favour of beer will have the satisfaction of knowing that what in future is supplied as beer will be a standard article, in the production of which the State will insist upon the use of a satisfactory proportion of its essential constituent—malt.

## REPEATED ECTOPIC PREGNANCY.

REPEATED ectopic pregnancy does not appear to be such a rare event as might be supposed. The *Scottish Medical and Surgical Journal* for February contains an interesting paper on the subject by Dr. J. A. C. Kynoch. He points out that according to Varnier in 177 cases of ectopic pregnancy which were treated by operation 17 subsequent pregnancies occurred, of which four were extra-uterine. Dr. J. Haig Ferguson had stated that out of 100 cases of extra-uterine pregnancy both tubes were involved simultaneously or successively in five. Recurrence may occur in the same tube, as in a case reported by Coe of a three-months fœtus and a lithopædion representing a pregnancy which had occurred two years previously in the same tube. Dührssen in one case found incomplete tubal abortion on both sides within an interval of 20 months. Dr. Haig Ferguson reported a case in which a tubal pregnancy of four months terminated in the formation of a lithopædion. Four years later this and a three months ectopic pregnancy in the opposite tube were removed by operation. Mackenrodt reported the case of a woman, aged 32 years, with all the symptoms of ectopic pregnancy on the right side who refused operation. 18 months later there were symptoms of left tubal pregnancy and the gravid tube was removed by operation. In the right tube fœtal bones were found. Edgar published a case in which both tubes were gravid and ruptured at the seventh and eight weeks respectively. They were successfully removed at one operation. Dr. Kynoch relates the following case in which the diagnosis of the first pregnancy was made only on clinical grounds. A woman, aged 30 years, was admitted to hospital on Jan. 19th, 1900, with pain in the left iliac region of one month's duration. She had been married for 14 years and had had six children. Menstruation, which was always regular, had last occurred 10 weeks before admission. Six weeks later there were sudden severe pain and irregular metrorrhagia. The pain was aggravated on defecation. The left lower quadrant of the abdomen was very tender and in it an ill-defined resistance was felt. The uterus was somewhat fixed and displaced to the right and there was a swelling in the left fornix, which under chloroform was found to be of the size of an orange and appeared to be in the broad ligament and close to the uterus. A smaller swelling was felt behind the uterus which was regarded as a prolapsed ovary and probably the cause of the pain on defecation. Hæmatoma in the broad ligament from rupture of a six weeks tubal pregnancy was diagnosed and it was decided to allow absorption to take place. After seven weeks only a slight thickening could be felt in the left fornix. In the next 18 months menstruation was regular. On Sept. 5th, 1901, the patient was readmitted with pain in the right iliac region of five weeks' duration. It began a week after she had passed her expected period and was followed by continuous hæmorrhagic discharge. Two large pieces of membrane were passed a few days after it began. Under chloroform a fixed, tender swelling was found to the right of the uterus. On rectal examination it felt like an inflammatory thickening of the utero-sacral ligament, therefore operation was postponed. Intermittent pain and irregular hæmorrhage occurred, and as the swelling did not diminish it was regarded as tubal gestation. On Oct. 3rd laparotomy was performed. The right tube, which was adherent and distended to the thickness of the thumb, was removed. It contained blood-stained fluid and numerous villi. The left appendages (which were not removed) were adherent and the upper part of the broad ligament was slightly thickened. Dr. Kynoch thinks that a six-weeks ectopic pregnancy ruptured into the left broad ligament and was absorbed.

## LIVERPOOL SCHOOL OF TROPICAL MEDICINE.

As already indicated in THE LANCET of March 22nd, p. 858, the annual report of the Liverpool School of Tropical Medicine shows that much good work was accomplished during 1901. At a public meeting held in Liverpool Town Hall on Feb. 12th in that year, on which occasion Sir William S. Church, President of the Royal College of Physicians of London, was the principal speaker, the staff of the school submitted a scheme for the sanitary improvement of the West African settlements and after various negotiations the case was submitted to Mr. Chamberlain, the Colonial Secretary, who proposed that a special commission consisting of merchants should proceed to West Africa in the company of a scientific expert for the purpose of investigating the subject. The sending-out of expeditions to carry on practical research in West Africa has been from the first a leading feature in the work undertaken by the committee of the school. Two such expeditions were sent in 1899. In 1900 a third expedition was sent to Nigeria and a fourth, composed of Dr. H. E. Durham and Dr. Walter Myers, proceeded to Parà, in Brazil, for the purpose of studying yellow fever. Both of these gentlemen contracted the disease and Dr. Myers unfortunately died, but Dr. Durham survived to continue the work and presented his report which is in course of publication. From June, 1901, to the end of the year three expeditions, making the fifth, sixth, and seventh, were despatched; Major Ronald Ross, late I.M.S., and Dr. M. Logan Taylor being sent to Freetown, Sierra Leone; Dr. J. E. Dutton being sent to Gambia, where he discovered a new parasite which causes a special type of fever; and Dr. C. Balfour Stewart being sent to the Gold Coast. The

course of instruction given at the school includes lectures and training in research work at the Thompson Yates Laboratories, University College, Liverpool, and clinical teaching in the special tropical ward of the Royal Southern Hospital. About 20 students attended the school during the year, including medical men from Canada, India, East Africa, Penang, Sierra Leone, Germany, Belgium, and Sweden. The chairman of the committee of the school is Sir Alfred Jones, K.C.M.G.

## REPORT OF THE MEDICAL OFFICER OF HEALTH OF LIVERPOOL ON THE OUTBREAK OF SMALL-POX IN LIVERPOOL.

THE report of the medical officer of health of Liverpool (Dr. E. W. Hope), dated March 13th, 1902, with reference to the outbreak of small-pox in that city, which has been furnished at the request of the Local Government Board, contains matter of much interest. Embodied in the report are tables and diagrams showing the sequence and history of the importations by sea; one of the diagrams shows how from a single case of small-pox imported on shipboard on Jan. 10th, 1902, the disease was communicated to 11 other individuals. The total number of cases of small-pox (including imported ones) occurring in the city since Dec. 6th, 1901, has been 112. Of these, two patients died, unvaccinated, and 69 remained under treatment on March 13th, 1902. During the first 10 months of the year 1901 25 cases of small-pox occurred in Liverpool, eight of which were imported by sea, and one developed small-pox a few days after arrival from a neighbouring town. The city was entirely free from small-pox during the month of November, 1901, and it may, therefore, be assumed that the present outbreak originated subsequently to that month. On Dec. 6th the s.s. *Volta* arrived, having 11 convalescent cases on board, five of which were temporarily detained. This was followed on Dec. 12th by the discovery that a fireman from the s.s. *Devonian* had landed on Nov. 28th and subsequently had developed small-pox at his home. This case was followed by a second one at the same address on Dec. 22nd. On Dec. 19th the s.s. *Norseman* arrived; one case of small-pox was removed from her and three persons who had been in contact developed small-pox shortly afterwards. It does not appear that there were any further developments from these cases. During January, 1902, importations of small-pox by sea occurred repeatedly and besides these there was also the case of an emigrant intending to travel to America who had arrived from Austria *viâ* Grimsby on the previous night; he was rejected by the s.s. *Garth Castle*. One other case during January calls for special comment and that is a case of a saloon passenger who arrived on board an Atlantic liner on Jan. 10th. This passenger had been suspected to be suffering from chicken-pox and had been carefully isolated by the surgeon. The disease, however, was ultimately regarded as a highly modified case of small-pox. On Feb. 18th a man arrived from London. He had been one of the crew of the s.s. *Ulunda* and he was removed to hospital from a lodging-house suffering from small-pox. He had been in attendance on a case of small-pox whilst on board the *Ulunda* but he had not been revaccinated. The importations of small-pox since Dec. 6th, 1901, either by sea or by land, number no less than 30 cases. The diagrams show the consequences of some of these imported cases and the extension of disease from person to person. The intense infectiousness of small-pox makes it difficult or impossible to trace the source of infection in the majority of instances. Under the routine practice, whenever a case of small-pox is notified (often by telephone) the patient is removed at once to hospital, the house is disinfected throughout, and the bedding and clothing are removed to the disinfecting station on the same day; other necessary precautions are also taken. A special effort is made to induce other inmates of the house who may be employed in large works or offices to be revaccinated. If they refuse an intimation is sent to the employer that it is advisable for them to remain at home for 14 days. The infected house is visited and all contacts are visited every day for 24 days and every few days after for another period of 14 days to ascertain if any further sickness has occurred. When a case occurs in a house in a court or similar insanitary premises the other inmates are removed to the city hospital for isolation and revaccination. They can usually be persuaded to go. A staff of 20 men is at present engaged exclusively in the prevention of small-pox. The difficulties in dealing with small-pox are owing largely to defects in legal powers to insure efficient protection by vaccination. It is no doubt true that in cases of limited importation or in cases in which the infected person has by chance only been in contact with those who have been vaccinated it has been possible effectually to isolate infected persons and by increasing watchfulness to trace those who have been exposed to infection and to induce them to submit to revaccination; and so the outbreak has terminated, but it is by no means always possible. Every day reveals the lamentable deficiency of the law in regard to vaccination. The President of the Local Government Board himself very properly laid down the importance of revaccinating inmates of an infected house or those who had been in contact with an infected person. Unfortunately, the law has never contemplated the necessity and consequently people are deprived of the protection which the law should give them. Glaring cases of the mischief resulting from the want of this protective power are frequent not only from negligence but also from wilfulness, as when a thoughtless drunken person, a vagabond, or a tramp departs from an infected lodging-house and the next that is heard of him is that he has developed small-pox in some other equally low and crowded district of the city. The report emphasises the necessity for some official control over the supply of vaccine lymph so as to ensure efficiency of quality. No doubt commercial enterprise has to a great extent met the demand for lymph, but what is wanted is some efficient guarantee of its quality—a guarantee which nothing short of Government supervision can give. No less than 35,000 persons (other than infants below six months of age) have been vaccinated or revaccinated in Liverpool during the last three months, a result largely owing to the highly creditable manner in which the press, ministers of religion, medical men, and others have stimulated the interest of thinking people on the subject.

## PERIL AND PLAY.

A CERTAIN number of the street accidents that take place daily in a vast and busy city like London may fairly be regarded as unavoidable. By the mere working of the law of averages, human beings remaining liable to sudden affections and drivers and pedestrians being human beings and horses also being subject to fright under certain conditions, sudden affections and frights may be expected in a certain number of instances daily among the thousands of horses, drivers, and pedestrians of the London streets, and when occurring will often inevitably lead to damage. For the inevitable nobody is to blame. Unfortunately, the larger proportion of accidents resulting in danger to life or limb are not inevitable. They are generally the result of carelessness which carries only one consolation—viz., that it is often the careless party who gets the most damage. Even this righteous retribution, however, is only partial and very often the penalty and the fault are unfairly divided between two individuals. In one class of accident, when damage befalls a child too young to be responsible for his actions, this is always the case. These accidents to children are

largely due to the widely prevalent practice of allowing children from the earliest ages to make a playground of the streets of London. No district of London is free from these irresponsible little danger-seekers, although in the crowded small streets of Whitechapel they do not run so much risk as among the more rapidly-moving carriage traffic of the West-end. The child, of course, is not to blame for incurring unnecessary peril. He has been sent to play in the street and it is the mothers who should be brought to see the danger of their advice. If there were no open spaces available we could only admire a determination to let the children have fresh air at all costs. As it is we ought to insist that such a practice, in itself admirable, should be carried out under the safe and most suitable conditions that are so freely available to the London poor in the public parks and open spaces. District visitors, among whom we believe a suitable topic of conversation at once edifying and capable of sensational treatment is often welcome and sought in vain, may do good service by a crusade against the use of the streets as a playground. We recommend the subject cordially to their consideration and are certain that medical men in London, some of whom perhaps have had the unpleasant experience of treating a child whom their coachman has run over, will thankfully endorse the efforts of the district visitor.

## THE SYPHILITIC AND PARASYPHILITIC AFFECTIONS OF THE NERVOUS SYSTEM.

AN important discussion on the syphilitic and parasyphilitic affections of the nervous system by Professor Leredde, Professor Fournier, and others is recorded in *Progrès Médical* of Feb. 12th and March 12th last. Professor Leredde stated that under the designation of "parasyphilitic" nervous affections there were included two groups of ailments—viz., first, hysteria, neurasthenia, and other rare nervous troubles which might occur in syphilitic subjects, as in patients suffering from other infections or toxæmias; and secondly, tabes dorsalis, general paralysis of the insane, and leukoplakia lingualis, which constituted parasyphilitic diseases in the proper sense. It was his experience that a certain proportion of patients in the latter group were beneficially affected by anti-syphilitic treatment carried out with perseverance and regularity. A case in support of this statement was quoted of a man, aged 43 years, who had contracted syphilis, and who had after an interval of five years rapidly developed grave nervous symptoms like those of tabes dorsalis—diplopia, visual troubles of accommodation, tachycardia, muscular atrophy, and bladder troubles. For this he was treated with mercurial injections for 12 months and with calomel for 18 months, the latter drug being alternately given for six weeks and stopped for an equal interval. Under the above treatment the symptoms were improved and the progress of the disease was arrested. M. Hallopeau, in his contribution to the discussion, stated that the degenerative lesions of tabes dorsalis were initiated by syphilitic hyperplasias and neoplasms affecting the posterior root ganglia of the spinal cord and hence followed the want of success in the anti-syphilitic treatment of tabes dorsalis of long standing when the degenerations of nerve-tissue were advanced, whereas treatment was often successful at the onset of the disease when the nerve cells and fibres had not as yet been degenerated or destroyed. M. Jaquet pointed out that tabes sometimes underwent sudden arrest in its development and even improved or retrogressed without anti-syphilitic treatment and that when optic neuritis developed in the course of tabes the other symptoms of the disease were often arrested, as was pointed out long ago by Professor Benedikt of Vienna. Dr. Moty, an army surgeon, stated that a patient under his observation with tabetic symptoms which appeared seven or eight years after syphilitic infection had been put under the "mixed treatment" with mercury and iodides with the result that all tabetic symptoms had disappeared and recovery could be now regarded as complete. On the other hand, he had seen similar treatment fail entirely in a number of cases of tabes. Professor A. Fournier stated that his personal experience of syphilitic and parasyphilitic diseases included 1300 cases of tabes collected from his case-books and that 1000 of these patients had had undoubted syphilis, 200 were doubtful, and 100 were quite free from syphilis. There were undoubtedly cases of tabes which improved with anti-syphilitic treatment but were not cured and he had only seen one case which could be regarded as completely cured by the treatment mentioned. Tabes in women had a tendency to remain benign for a very long time, the clinical symptoms consisting of slight darting pains in the limbs, myosis and inequality of the pupils, Argyll-Robertson reflex, and slight bladder troubles. Some of these cases might easily be mistaken as instances of recoveries when the pains in the limbs and the bladder troubles improved under treatment, whereas the disease nevertheless progressed slowly. Parasyphilitic nervous affections were, in the vast majority of cases, incurable, whereas true syphilitic affections (commencing gummatous lesions and connective tissue hyperplasias in the nervous system, as well as mucous plaques) were in most cases amenable to anti-syphilitic treatment.

## ATAXY AND TETANY AFTER DIPHTHERIA.

IN the twenty-eighth volume of St. Thomas's Hospital Reports Dr. Charles R. Box has called attention to the occurrence of two rare sequels of diphtheria—transient ataxy and tetany—and has recorded a remarkable case in which both were present. A house physician contracted nasal and pharyngeal diphtheria. On the third day the bacilli were found and 7000 units of antitoxin were injected. On the fourth day the dose was repeated. The temperature became normal and the throat rapidly assumed a healthy appearance. On the fourteenth day there were a feeling of oppression in the chest and præcordial pain. The latter increased and radiated into the arms. Tingling of the fingers and dyspnœa followed and the pain extended to the legs. The hands were clenched, the wrists were flexed, and the forearms were strongly pronated. The legs were extended and the feet were in a position of extreme plantar flexion with flexion of the toes. The back was slightly arched, but the jaws were not affected. The patient spoke with difficulty and complained of pain in the wrists, the ankles, and the chest. The spasm gradually disappeared but next night it recurred in less degree. During convalescence slight spasms occurred in the arms for many weeks. About the end of the third week nasal regurgitation and intonation and tingling of the tongue and finger-tips were present. The regurgitation lasted for a month. The patient was allowed to sit in a chair but he betook himself to bed again on the sixty-first day. The legs were weak and hyperæsthetic. Tenderness was so great that he could not sit with the legs crossed. The external popliteal nerves were tender. The knee-jerks were easily obtained. The fingers were hypæsthetic and the arms were paretic. Ataxic symptoms were definitely noticed on the seventy-third day. The patient could not stand and in attempting to walk he reeled in all directions; the movements of the arms were incoördinate and almost choreic. In trying to feed himself he nearly injured his eyeball with the fork. He never knew where his arms and legs were. The fingers and hands were hypæsthetic, the arms and feet were paræsthetic, and the soles were hyperæsthetic. The knee-jerks were obtained with difficulty. Muscular weakness was

inconsiderable and the ataxic movements were very forcible. After three weeks rapid improvement occurred. For some time standing on a carpet was painful and gave the sensation of standing on tin-tacks. At this time the knee-jerks were absent. It is beginning to be recognised that ataxy may occur after diphtheria as after other infections in which peripheral neuritis is observed. Dr. H. W. G. Mackenzie found in children recovering from diphtheria such symptoms as staggering, stumbling, and giving way of the legs in 33 out of 955 cases.[1] The incoördination occurred about the sixth or eighth week and lasted a few weeks. The knee-jerks generally disappeared at a later period. Sir William Gowers says that incoördination may be marked in diphtheria when there is little or no loss of power and may occur independently of any sensory affection. Dr. Box attributes the ataxy to peripheral neuritis which he thinks prevented the transmission of the afferent impulses, principally from the muscles and bones, on which the sense of position depends. The transient muscular spasms he regards as tetany which he has observed in three out of 700 cases of diphtheria.

## THE LOCALISATION OF FOREIGN BODIES IN THE EYE.

ALTHOUGH the application of the Roentgen rays enables the presence in the eye of fragments of metal to be satisfactorily shown, the precise localisation of such fragments is a much more difficult problem. The globe of the eye is in most persons deeply imbedded in the fat of the orbit and the rays destined to reveal the foreign body have to traverse skin, muscle, and bone to an extent which requires prolonged exposure before good results can be obtained on the photographic plate. A little instrument has been devised by Professor L. Webster Fox of Philadelphia, Penn., which is described in the *Philadelphia Medical Journal* for February and which is intended to act as a localiser whilst enabling the time of exposure to the rays to be shortened to less than a second. It consists of an oval band of gold or silver 0·75 millimetre in width constructed to fit upon the cornea and provided with two gold strands crossing in front at right angles, thus dividing the instrument into quadrants. Prior to the period of exposure to the rays the cornea is rendered insensitive by the instillation of a drop or two of a solution of cocaine. The skiagraphic pictures show that some outlines of the localiser are better defined than others, the clearer outlines indicating that part of the localiser which is nearest to the photographic plate. To some extent, then, the position of the foreign body can be judged by the sharpness of its shadow. Its absolute position may be verified by a second or control test. This test is made by placing a plate not on the temporal side but in front of the eye, causing the x rays to pass through the head. Professor Fox gives several woodcuts which seem to show that the instrument which he has devised will prove useful in practice.

## FORTHCOMING CONGRESSES.

THE Second International Congress for Electricity in Medicine and Radiography will be held in Berne from Sept. 1st to the 6th, 1902. The president of the committee of organisation is Dr. Dubois and the secretary is Dr. L. Schnyder. In addition to the communications made by members papers will be read on the following general subjects: (1) The Present State of Electro-diagnosis, by Dr. Cluzet (Toulouse) and Dr. Mann (Breslau); (2) Surgical Electrolysis, by Dr. Guilloz (Nancy); (3) Radiography and Radioscopy of the Internal Organs, by Dr. Béclère (Paris) and Professor Grunmach (Berlin); (4) Accidents Caused by X Rays, by Dr. Oudin (Paris); and (5) the Danger of Electric Currents in their Industrial Applications, by Dr. Battelli (Geneva). The duration of each paper is limited to 20 minutes; the manuscript should be sent to the secretary before July 15th. An exhibition of electrical instruments of physiological, electro-therapeutical, and radiographical interest will be held in connexion with the congress. The membership subscription, which includes the right to receive the publications of the congress, is 25 francs (£1); ladies accompanying members are admitted to the official entertainments on payment of 10 francs (8*s*.). Membership vouchers and every information may be obtained from the secretary, Dr. L. Schnyder, 38, Rue Fédérale, Berne, Switzerland, or from Dr. René Koenig, 42, Welbeck-street, London, W.—The Second International Congress for the Prophylaxis of Syphilis and Venereal Diseases will be held at Brussels from Sept. 1st to the 6th, 1902. The principal items on the programme are as follows: (1) Legal Provisions with respect to the Prostitution of Minors; (2) the Action of Public Bodies, whether in the Interest of Public Morality and Tranquility or from a Sanitary Point of View; (3) the Organisation of Measures of Relief for Patients suffering from Venereal Diseases; (4) the Questions of Civil and Penal Responsibility for the Transmission of Venereal Disease; (5) the Best Means of Enlightening the General Public on the Dangers of Syphilis and Gonorrhœa; and (6) the Compilation of Statistics on a Uniform Basis. For Great Britain the secretary of the Congress is Mr. J. E. Lane, 46, Queen Anne-street, London, W.

## COLLOIDAL HÆMOGLOBIN.

IN a paper communicated to the Royal Society "On Certain Chemical and Physical Properties of Hæmoglobin" which formed the subject of the Croonian Lecture, Dr. A. Gamgee, F.R.S., cited some important facts in regard to the colloidal yet soluble form of oxy-hæmoglobin. Hitherto oxy-hæmoglobin has been known in its crystalline condition and in solution in water. Now that it has been obtained in the third or colloidal form it exhibits a complete analogy with silicic acid. Though colloidal hæmoglobin behaves as a typical colloid in the sense of its absolute indiffusibility through animal membranes and parchment paper, yet it differs from most colloids in the facility with which it crystallises. Carboxy-hæmoglobin presents the same characteristics. The discovery of this form of hæmoglobin is calculated to throw much light on the state in which the colouring matter of blood is probably contained in the corpuscles. For example, it is well known that the amount of hæmoglobin contained in the corpuscles is so large that in most animals at least the whole of the water of blood would not be sufficient to dissolve it. It is perfectly obvious, therefore, that it did not exist in the corpuscles in a state of solution and the opinion has generally been held that these contained some unknown compound of oxy-hæmoglobin with a constituent of the stroma. It seems highly probable that in the red blood corpuscle hæmoglobin may be merely present in its colloidal form. Finally, Dr. Gamgee points out that the remarkable facility with which the new colloidal form of hæmoglobin traverses such permeable membranes as the animal membrane, and even parchment paper when its solutions are electrolysed, suggests to physiologists the possibility that certain of the phenomena of absorption in the animal body may be closely connected with electromotive changes in the tissues concerned. Colloidal hæmoglobin falls as a beautiful red cloud in the electrolytic cell, leaving a perfectly colourless supernatant liquid. It instantly dissolves on stirring. There is no doubt that the colloidal condition plays a great rôle in the vital processes and a fruitful field of study is probably opened up by this discovery.

[1] St. Thomas's Hospital Repo , 1893.

Some years ago colloidal yet perfectly soluble sulphur was discovered and it is possible that many other elements and compounds would yield colloidal forms if carefully studied and submitted to experiment.

## SMALL-POX IN LONDON.

THE returns of small-pox for the past week are as follow: on Saturday, March 22nd, there were 43 fresh cases notified and removed; on Sunday, the 23rd, there were 41 fresh cases; on Monday, the 24th, there were 72 fresh cases; and on Tuesday, the 25th, there were 42 fresh cases.

## THE PRODUCTION OF AMBLYOPIA BY ALCOHOL.

THE peculiarly toxic action of methyl alcohol in producing blindness has been already mentioned and described in these columns.[1] In the *Johns Hopkins Hospital Bulletin* for February and March Dr. Harry Friedenwald gives the results of a research carried out to determine the precise *modus operandi* of alcohol on the retina. Pure and commercial methyl alcohols, pure ethyl alcohol, and essence of Jamaica ginger (which contains 95 per cent. of methyl alcohol) were given to rabbits in small doses for extended periods of time—viz., about four months. The animals when killed were in apparent good health but the post-mortem examination showed the presence of cirrhosis and fatty degeneration of the liver. The retinæ were examined after preparation and staining with Nissl's methods. "The effects of all four substances [on the retinæ] were alike. The retinal ganglion cells showed marked degeneration (chromatolysis) and the inner and outer nuclear layers were less affected. It was evident that methyl alcohol and ethyl alcohol acted similarly on the retina" in small doses (chronic toxæmia) when given for a long period. Dr. Friedenwald refers to an observation made in 1899 by Holden who examined the retinæ of a dog which had drunk freely of methyl alcohol and had developed blindness subsequently and who found the ganglion cells degenerated when studied by Nissl's method; reference is also made to the experiments of Birch-Hirschfeld who found similar changes in the retinæ of rabbits and chickens which had developed blindness as the result of acute alcoholic intoxication. Dr. Friedenwald's experiments are apparently the first recorded ones on the results of chronic alcoholic intoxication as shown by the retinal changes underlying the amblyopia thus produced by alcohol.

## CHLOROFORM ANÆSTHESIA DURING SLEEP.

IN the January number of the *Cleveland Medical Journal* Dr. N. Stone Scott of Cleveland, Ohio, discusses the question as to whether it is possible for a sleeping person to be anæsthetised without being wakened thereby. He says that with ether such a feat is apparently impossible but with chloroform it has been accomplished. He has been successful on two or three occasions with young children and also with an adult in the following case which occurred in September, 1898. The patient was a single woman, aged 21 years, whose knee it was intended to cauterise on account of tuberculous arthritis. On the day appointed for the operation she was in a nervous and apprehensive state and could not be prevailed upon to submit to it, but some days afterwards she changed her mind and consented. Having arrived at the house Dr. Scott on entering her room saw that she was asleep and motioned to those who were following him that they should be quiet. Chloroform was then given very carefully and slowly increased in amount. When the stage of excitement was reached she started to rise but a restraining hand was placed upon her shoulder, the cone was dropped to her face, and the quantity was given as usual. When she was completely under the anæsthetic the knee was cauterised and dressed; on awaking from the anæsthetic she was very much surprised to find the bandage upon her knee; the surgeons had by that time left the house and she had no recollection of their visit. Without mentioning any names or places Dr. Scott relates an anecdote to the effect that a couple of years ago a "house doctor" at a hospital, having discovered one of his colleagues asleep upon the operating cart, for a joke administered chloroform without waking him and then wheeled him through the hospital for the edification of all and sundry. The admitted rarity of such an occurrence plainly shows that imaginative writers have no more than the slenderest possible foundation in fact for their marvellous stories of anæsthetics administered to the victims of robbery or other crimes.

[1] Blindness due to Drinking Bay Rum, THE LANCET, July 13th, 1901, p. 93.

THE meeting of the Pathological Society of London announced for April 1st will not take place, but an additional meeting will be held on April 29th in its stead.

# Looking Back.

FROM

## THE LANCET, *SUNDAY, MARCH* 28, 1824.

### FOREIGN DEPARTMENT.

### ROYAL INSTITUTE OF FRANCE.

SITTING OF THE 19th JAN.

Dr. RUNGES, professor at the University of Berlin, read a memoir on a new method of detecting the narcotic principle of the atropa belladonna, hyoscyamus niger, and datura stramonium in cases of poisoning by those plants. These substances applied to the eye, have the property of dilating the pupil, and Dr. RUNGES, by examining the extracts and pharmaceutical preparations from other medicinal plants, as well as a great number of substances derived from the animal kingdom, has ascertained that the property of dilating the pupil is peculiar to the above-mentioned plants. His method consists in boiling the stomach or intestines of the animal poisoned by these vegetable substances, evaporating the aqueous solution to the consistence of an extract, and applying it with a camel hair pencil to the eye of an animal. He prefers performing this experiment on the cat, because the form of its pupil affords a better opportunity of witnessing this phenomenon.

He subjected the blood and urine of animals poisoned, to the same process, but he could only demonstrate the presence of the narcotic principle in the urine. The property of dilating the pupil, peculiar to these plants, depends on a chemical principle, each of them containing an organic alcaline substance, which can neutralise acids, and form with them salts capable of crystallisation, and possessing very powerful properties. This chemical principle has been named *koromegine*, from its power of dilating the pupil.—*Revue Medicale, Feb.*

### AMENORRHŒA.

We stated, a short time ago, that a trial was making of the injection of liquid ammonia in two cases of amenorrhœa, at St. Thomas's Hospital, in consequence of Dr. LAVAGNA'S paper in *Omodei's Annali Universali di Medicina*, which we translated in *The Lancet* of the 1st February. In one of these cases, which was supposed to be amenorrhœa, the woman was subsequently discovered to be pregnant; in the other, we have the satisfaction of stating that this new remedy proved completely successful, the menstrual discharge having returned within 48 hours after the use of the injection. Dr. ELLIOTSON was the physician who made this experiment.

# Pharmacological Notes.

## GUAIAFORM.

F. G. EHLERT[1] gives an account of guaiaform, a condensation product of guaiacol and formaldehyde, which was first prepared in 1898 by Dr. G. H. Henning of Berlin, who named it geoform, and subsequently by Brissonet, to whom the name guaiaform is due. This compound does not seem to have been extensively used up to the present. It would seem from a study of its composition to be deserving of notice, for it combines in a convenient form the properties of guaiacol and of formaldehyde. Guaiaform occurs as a tasteless yellow powder, odourless when fresh but acquiring a vanilla-like odour on keeping. It is insoluble in water but readily soluble in alcohol and in ether. It contains 95·38 per cent. of guaiacol. As to the therapeutic properties of guaiaform but little is yet known; pulmonary tuberculosis and typhoid fever are mentioned as affections in which it may be used. Guaiaform appears to be a non-irritating, non-toxic preparation possessing general antiseptic properties. Brissonet gave 15 grammes of it to a dog without producing ill-effects. No special study of the peculiar properties of guaiaform appears to have been undertaken.

## THE VALUE OF COCAINE AS A SPINAL ANÆSTHETIC.

Dr. Arnold W. W. Lea discusses at some length in the *Medical Chronicle*[2] the value of injections of cocaine for the production of spinal anæsthesia and makes observations on 18 cases. The surgical details were carried out in the same manner as adopted by M. Tuffier of Paris. The subarachnoid space may be punctured between any of the lumbar vertebræ, preferably between the fourth and fifth. An iridium-pointed platinum needle, nine centimetres long, with a diameter of 0·8 millimetre, is employed in a Pravaz syringe with glass barrel and asbestos packing, capable of holding two cubic centimetres (30 minims). These must be carefully sterilised by boiling. The sterilised cocaine hydrochlorate solution (2 per cent.) is best kept in capsules, each containing two cubic centimetres of cocaine, equivalent to one-fifth of a grain. It is important that this quantity of solution should not be exceeded or serious toxic symptoms may arise. Complete analgesia of the body below the diaphragm is induced within from 5 to 10 minutes, or even earlier; very rarely from 15 to 20 minutes may be required. Vomiting may supervene. Complete analgesia may usually be relied upon for from one to one and a half hours, but in some cases may only continue for 45 minutes. The operations carried out when this method of inducing analgesia is employed include ovariotomy, Cæsarean section, removal of the uterine appendages for inflammatory disease, ventro-fixation with resection of an ovary, exploration for myoma and pregnancy, pelvic abscess, acute pyosalpinx, amputation of the cervix and colporrhaphy, ligature of the uterine artery, operations for the relief of complete rupture of the perineum, and for hæmorrhoids. In all of these the analgesia was complete with three exceptions, in one of which the patient found that the operation was quite bearable; in the other two cases chloroform had to be administered. The sequelæ of medullary analgesia are mainly three—viz., sickness, rise of temperature, and headache. The temperature rose to from 100° to 103·8° F. but subsided in all cases within 24 hours. The headache, which may continue for three or four days, is diminished or checked by the administration of phenacetin in 10-grain doses immediately after the operation; nitro-glycerine and hyoscine hydrobromide are also strongly recommended. Dr. Lea describes the risks and complications which may possibly arise, including mechanical injury, sepsis (a real danger), the difficulty in entering the subarachnoid space, the failure to produce analgesia, organic changes in the cord or meninges, the toxic effects of cocaine, and the possibility of death following the injection. Dr. Lea considers that further experience is required before a final estimate of the true position of this method of producing analgesia can be obtained. The question of the relative risks of spinal analgesia and general anæsthesia by chloroform or ether cannot as yet be definitely answered. With the former loss of consciousness is not attained nor complete muscular relaxation. Spinal analgesia is only suitable for operations on the lower half of the body, as injections in the dorsal and cervical regions may be dangerous. M. Tuffier does not consider this method suitable for children, for nervous or hysterical patients, or for prolonged and difficult abdominal operations. Dr. Lea considers that the toxic effect of cocaine is still the principal element of danger. There is also the difficulty of completely sterilising cocaine solutions as they cannot be boiled without destroying their analgesic effects. Eucaine and β-eucaine have been used with little or no success and antipyrine with only partial success. Tropacocaine has recently been used with success and is said to be devoid of all toxic effects.[3]

[1] Pharmaceutical Review, January, 1902, p. 15.
[2] Fourth Series, vol. ii., No. 3, p. 161.

[3] Schwartz: Centralblatt für Chirurgie, March, 1901. Neugebauer: Wiener Klinische Wochenschrift, 1901, No. 50, p. 1229.

# THE NEW ROYAL WARRANT FOR THE ARMY MEDICAL SERVICE.

## ARMY ORDER.

SPECIAL.

WAR OFFICE, 1902.

THE following Royal Warrant and Instructions are promulgated to the Army with the approval of the Secretary of State for War.

### ROYAL WARRANT.

### ARMY MEDICAL SERVICE.

Whereas We deem it expedient to amend the Regulations relating to the Appointment, Promotion, Pay, and Non-effective Pay of Officers of Our Army Medical Service:

Our Will and Pleasure is that the Warrant of Our late Royal Mother, dated the 26th October, 1900, shall be amended in accordance with the following provisions:—

1. The following shall be substituted for Article 315 and the first five lines of Article 320:

315. The Director-General of Our Army Medical Service and the other officers of Our Army Medical Staff shall hold the substantive rank of Surgeon-General.

320. The under-mentioned officers shall rank as follows in relation to combatant officers for the purposes specified in the King's Regulations:—

| | |
|---|---|
| As Lieutenant-General ... | ...Surgeon-general holding the appointment of Director-General, Army Medical Service. |
| As Major-General | Chaplain-General. Surgeon-General. |

2. The following shall be substituted for Article 327:—

327. In cases of distinguished service in the field a departmental officer may, with the concurrence of the Lords Commissioners of Our Treasury, be promoted from any rank or class to that next above it and shall, if promoted to a rank or class having a fixed establishment, remain supernumerary in such rank or class until the occurrence of the vacancy to which, in the ordinary course, he would have been promoted.

An officer so promoted into a rank or class, with progressive rates of pay, shall not receive a further increase of pay in that rank or class until he becomes entitled thereto by service.

In a case of distinguished service in the field for which an officer may merit special reward, although there may not be sufficient grounds for his promotion, Our Secretary of State shall, if the officer is serving in a rank or class with progressive rates of pay and is not already in receipt of the highest rate, have the power, with the concurrence of the Lords Commissioners of Our Treasury, to grant him a higher rate of pay in his rank or class, but without alteration of his seniority.

3. The following shall be substituted for Articles 347 to 373:—

APPOINTMENT.

347. Commissions as lieutenants in Our Royal Army Medical Corps shall be given, on the recommendation of Our Commander-in-Chief, to persons duly qualified under regulations approved by Our Secretary of State. The commissions shall bear the date of the officers' appointment as lieutenants on probation.

348. Commissions as quartermasters in Our Royal Army Medical Corps shall be conferred upon warrant officers of that corps under the conditions of Article 8.

SECONDED OFFICERS.

349. A lieutenant on probation who, at the time of passing the examination for admission to Our Royal Army Medical Corps, holds, or is about to hold, a resident appointment in a recognised civil hospital may be seconded for the period, not exceeding one year, during which he holds the appointment. While seconded he shall not receive pay from Army funds, but his service shall reckon towards promotion, increase of pay, gratuity, and pension.

PROMOTION.

350. An officer shall be eligible for promotion to the rank of captain on the completion of three and a half years' service and to the rank of major on the completion of 12 years' service, provided that in each case he has previously qualified in such manner as may be prescribed by Our Secretary of State.

**351. Promotion to the rank of lieutenant-colonel shall be made by selection from officers who have completed at least 20 years' service and have qualified in such manner as may be prescribed by Our Secretary of State.**

**352. If an officer has passed with distinction the examination qualifying for promotion to the rank of major the period of service required by Article 350 or 351 to render him eligible for the rank of major or lieutenant-colonel may be reduced as follows:—**

| | |
|---|---|
| If he obtained a "special certificate" ... ... ... | 18 months. |
| If he passed in the 1st class ... ... ... ... ... ... | 12 ,, |
| If he passed in the 2nd class ... ... ... ... ... ... | 6 ,, |
| If he passed in the 3rd class ... ... ... ... ... ... | 3 ,, |

**353.** *A lieutenant in Our Royal Army Medical Corps, promoted to the rank of captain before the date of this Our Warrant, on account of distinguished service in the field, shall be eligible for further promotion to the rank of major, and subsequently to that of lieutenant-colonel, when the officer next below him in the rank of captain or major completes 12 or 20 years' service respectively. A captain so promoted to the rank of major shall, on the same conditions, be eligible for promotion to the rank of lieutenant-colonel.*

**354. An officer who may, in the opinion of Our Secretary of State, have been prevented under very special circumstances from qualifying for promotion as laid down in Article 350 or 351, or who, having failed to qualify, may have been debarred from further opportunity of qualifying, may be provisionally promoted. If, however, he fails to qualify on the first available opportunity his promotion shall be cancelled and he shall be retired from Our service.**

**355. An officer of Our Royal Army Medical Corps who has exchanged or been transferred from Our Indian Military Forces under Article 364 shall reckon, subject to the conditions of that article, his previous service with the said forces towards promotion, increase of pay, gratuity, and pension.**

**356. An officer of Our Royal Army Medical Corps shall be eligible for promotion to brevet rank under the conditions laid down in Article 36.[1]**

**357. Promotion to the rank of colonel shall be made by selection from lieutenant-colonels who have been specially selected for increased pay, and from lieutenant-colonels, or surgeon lieutenant-colonels of Our Household Troops, specially recommended to Our Secretary of State for distinguished service in the field.**

**358. Promotion to the rank of surgeon-general shall be made by selection from colonels.**
**A colonel may also be promoted to the rank of surgeon-general for distinguished service in the field.**

**359. The promotion of an officer under Articles 357 or 358 for distinguished service in the field shall be governed by the conditions laid down in Article 327.**

**360. The appointment of director-general of Our Army Medical Service shall be for three years, unless the term is specially extended by Our Secretary of State for a further period not exceeding two years.**

### SUPERNUMERARY LIST.

**361. An officer who does not qualify for promotion to the rank of captain or major, within the periods specified in Article 350, shall be placed on the supernumerary list until he qualifies or is retired from Our Service under Article 567. Service on the supernumerary list shall not reckon towards promotion, increase of pay, gratuity, or pension.**

### KING'S HONORARY PHYSICIANS AND HONORARY SURGEONS.

**362. Six of the most meritorious officers of Our Army Medical Service shall be named Our Honorary Physicians and six Our Honorary Surgeons. On appointment as one of Our Honorary Physicians or Honorary Surgeons an officer under the rank of colonel in Our Royal Army Medical Corps may be promoted to brevet rank of colonel.**

### EXCHANGES AND TRANSFERS.

**363. An officer of Our Royal Army Medical Corps shall be permitted to exchange with another officer of such corps or with a medical officer of Our Household Troops under such conditions and regulations as may from time to time be made by Us.**

**364. Exchanges between officers of our Royal Army Medical Corps under the rank of major and medical officers of our Indian military forces, and transfers of such officers from either of the above services to the other, shall only be permitted subject to the approval of our Secretary of State for India in Council and on the following conditions:—**

**(1) That the officers have less than seven years' service.**

**(2) That the senior officer exchanging takes the place of the junior on the list and shall not be promoted until the officer next above him has been so promoted.**

**(3) That the junior officer exchanging is placed for seniority next below all medical officers whose commissions have the same date as his own.**

**(4) That the officer transferred is placed for seniority below all medical officers holding the same rank at the time of his transfer and shall not be promoted until the officer next above him has been promoted.**

### PAY, ADDITIONAL PAY, AND CHARGE PAY.

**The following shall be the rates of pay, additional pay, and charge pay of the officers of our Army Medical Staff and the Royal Army Medical Corps, &c.:—**

**365. PAY.**

| | Inclusive of all allowances except field and travelling allowances. |
|---|---|
| ARMY MEDICAL SERVICE. *At Headquarters.* | Yearly. |
| Director-General ... ... ... ... ... ... ... ... | £2000* |
| Deputy Director-General ... ... ... ... ... ... ... | 1500 |
| Assistant Director-General ... ... ... ... ... ... ... | 850 |
| Deputy Assistant Director-General ... ... ... ... | 750 |

* The increased rate of pay for the Director-General shall be allowed from the 1st December, 1901.

| | Exclusive of allowances. |
|---|---|
| *At other Stations.* | Daily. |
| Surgeon-General ... ... ... ... ... ... ... ... ... | 3 0 0 |
| Colonel ... ... ... ... ... ... ... ... ... ... ... | 2 0 0 |
| Lieutenant-Colonel ... ... ... ... ... ... ... ... | 1 10 0 |
| Lieutenant-Colonel specially selected for increased pay after at least eight years' service abroad ... ... | 1 15 0 |
| Major ... ... ... ... ... ... ... ... ... ... ... | 1 3 6 |
| After three years' service as such ... ... ... ... | 1 6 0 |
| Captain ... ... ... ... ... ... ... ... ... ... ... | 0 15 6 |
| After seven years' total full pay service ... ... ... | 0 17 0 |
| After 10 years' total full pay service ... ... ... ... | 1 1 0 |
| Lieutenant on probation and Lieutenant ... ... ... | 0 14 0 |
| Adjutant of our Royal Army Medical Corps (Volunteers) ... ... ... ... ... ... ... ... ... | The pay of his rank. |
| Quartermaster ... ... ... ... ... ... ... ... ... | As a quartermaster of infantry. |

**366. A lieutenant-colonel appointed one of Our Honorary Physicians or Honorary Surgeons shall receive pay at the rate laid down for a colonel of Our Royal Army Medical Corps when qualified for promotion to that rank.**

**A captain of Our Royal Army Medical Corps holding the brevet rank of major shall receive pay at 2s. a day in addition to the rates laid down for a captain in Article 365.**

**367. *Additional Pay.***

| | |
|---|---|
| Officer not serving on the headquarters staff appointed a member of the Advisory Board ... ... ... ... ... ... | £150 a year. |
| Officer serving as secretary of the Advisory Board and Nursing Board ... ... ... ... ... ... ... ... ... | £100 ,, |
| Officer under the rank of lieutenant-colonel holding an appointment as specialist ... ... ... ... ... ... ... | 2s. 6d. daily. |
| Quartermaster in charge of the medical stores at Woolwich ... ... ... ... ... ... ... ... ... ... ... | 2s. 6d. ,, |

**368. *Charge Pay.***

**(a) Officer in charge of a general or other hospital; or of a division of a general hospital:—**

| | | | |
|---|---|---|---|
| If in charge of at least | 50 beds ... ... ... ... | 2s. 6d. daily. | |
| ,, ,, | 100 ,, ... ... ... ... | 5s. 0d. ,, | |
| ,, ,, | 200 ,, ... ... ... ... | 7s. 6d. ,, | |
| ,, ,, | 300 ,, ... ... ... ... | 10s. 0d. ,, | |

**(b) Officer in command of the depôt, Royal Army Medical Corps ... ... ... ... ... ... ... ... ... ... 5s. 0d. ,,**

**(c) The senior officer of our Army Medical Service with an army in the field—**
**A rate to be fixed by Our Secretary of State according to the magnitude of the charge.**

**(d) In a command abroad—**
**The senior medical officer, if the number of soldiers is 1500 or upwards ... ... ... ... ... 5s. 0d. daily.**

### EXTRA-DUTY PAY.

**369. An officer of Our Royal Army Medical Corps, appointed to act as adjutant or quartermaster of Our Royal Army Medical Corps (Militia) during preliminary drill or training, shall receive extra-duty pay at the following daily rates:—**

| | |
|---|---|
| Acting adjutant ... ... ... ... ... ... ... | 2s. 6d. |
| Acting quartermaster ... ... ... ... ... ... | 2s. 0d. |

### RESERVE OF OFFICERS.

**370. On the completion of three years' service an officer of Our Royal Army Medical Corps may be permitted by Our Secretary of State to become an Army Reserve officer for a period of seven years, and while so serving he shall receive pay at the rate of £25 a year.**
**With the sanction of Our Secretary of State such officer may be**

[1] *Secretary of State's Instructions.*—Distinction in original investigation or research may, in the case of an officer of the Royal Army Medical Corps, be regarded as "distinguished service of an exceptional nature other than in the field," within the meaning of Article 36.

allowed to return to the active list, and if the period he has been in Our reserve of officers amounts to at least one year, and not more than three years, he shall be allowed to reckon one-third of such period towards promotion, gratuity, and pension.

PAY DURING SICK LEAVE.

371. An officer of Our Army Medical Staff or Royal Army Medical Corps may be allowed full pay during sick leave of absence under the conditions of Articles 298 and 299.

MEDICAL OFFICERS OF THE REGIMENTS OF HOUSEHOLD TROOPS.

4. The following shall be substituted for Articles 382 to 388:—

*Appointment.*

382. A major or lieutenant-colonel of Our Royal Army Medical Corps may, on the nomination of the titular colonel of the regiment, be transferred from his corps into the rank of surgeon-major or surgeon-lieutenant-colonel respectively in one of our regiments of Household Troops.

*Promotion.*

383. A surgeon-major shall be eligible for promotion to the rank of surgeon-lieutenant-colonel on completing 20 years' service (*see* Article 352), provided that he has previously qualified in such manner as may be prescribed by Our Secretary of State.

Promotion to the rank of brigade-surgeon-lieutenant-colonel shall be made by seniority on the medical establishment of the brigade.

384. A surgeon-major may be promoted to the rank of surgeon-lieutenant-colonel for distinguished service in the field, under the conditions laid down in Article 327.

*Exchanges.*

385. A medical officer of Our Household Troops may be permitted to exchange with an officer of Our Royal Army Medical Corps, provided that an officer exchanging into our Royal Army Medical Corps has fulfilled any conditions as to service abroad required of officers of such corps.

*Pay.*

386. The rates of pay of medical officers of our Household Troops shall be as follows:—

| | |
|---|---|
| Brigade-surgeon-lieutenant-colonel ... ... ... ... ... | £1 15 0 |
| Surgeon-lieutenant-colonel ... ... ... ... ... ... ... | 1 10 0 |
| Surgeon-major ... ... ... ... ... ... ... ... ... | 1 3 6 |
| After three years' service as such ... ... ... ... ... | 1 6 0 |

387. A medical officer of our Household Troops shall be eligible for extra pay under the provisions of Articles 367 and 368.

*General Regulations.*

388. In all matters not provided for by Articles 382 to 387 and 565 to 562 the medical officers of Our Household Troops shall be governed by the general regulations for regimental officers of Our Army.

**RETIREMENT.**

5. The following shall be substituted for Articles 555 to 564:—

(*a*) VOLUNTARY RETIREMENT.

CONDITIONS OF RETIREMENT.

555. An officer of Our Army Medical Service, or a medical officer of Our Royal Malta Artillery, may be permitted to retire, in cases in which such retirement may be deemed expedient by Our Secretary of State.

SCALE OF RETIRED PAY.

556.

| | Daily. |
|---|---|
| *Army Medical Staff.* | |
| Surgeon-General ... ... ... ... ... ... ... ... ... | £2 0 0 |
| *Royal Army Medical Corps and Medical Officers of Household Troops.* | |
| Colonel ... ... ... ... ... ... ... ... ... ... ... | £1 15 0 |
| Lieutenant-colonel, or surgeon-lieutenant-colonel of the Household Troops— | |
| After 20 years' service... ... ... ... ... ... ... ... | £1 0 0 |
| ,, 25 ,, ... ... ... ... ... ... ... ... | 1 2 6 |
| ,, 30 ,, ... ... ... ... ... ... ... ... | 1 5 0 |
| Lieutenant-colonel, after having been in receipt of the increased pay allowed by Article 365 for three years, or brigade-surgeon-lieutenant-colonel of the Household Troops— | |
| Under 30 years' service ... ... ... ... ... ... ... ... | £1 7 6 |
| After 30 ,, ,, ... ... ... ... ... ... ... ... | 1 10 0 |
| Major, or surgeon major of the Household Troops— | |
| After 20 years' service ... ... ... ... ... ... ... ... | 1 0 0 |
| After 25 years' service, if his service reckoning for promotion is insufficient to qualify him for promotion to the rank of lieutenant-colonel under Article 351 ... | 1 2 6 |

| Major or Captain— | Gratuity. |
|---|---|
| After five years' service in the rank of captain ... ... ... | £1000 |
| *After ten years' service, if the officer was commissioned before the date of this Our Warrant* ... ... ... ... ... | 1250 |
| After three years' service in the rank of major, *or, if the officer was commissioned before the date of this Our Warrant, after* 15 *years' service* ... ... ... ... ... ... | 1800 |
| After six years' service in the rank of major, *or, if the officer was commissioned before the date of this Our Warrant, after* 18 *years' service* ... ... ... ... ... ... | 2500 |
| Surgeon-lieutenant-colonel or surgeon-major of the Household Troops— | |
| After 15 years' service ... ... ... ... ... ... ... ... | 1800 |
| ,, 18 ,, ... ... ... ... ... ... ... ... | 2500 |

*Medical Officers of the Royal Malta Artillery.*

All ranks—retired pay equal to the half-pay of the officer's rank.

Except in the case of a lieutenant-colonel, an officer of Our Army Medical Service who, on voluntary retirement, has served for less than three years in the rank from which he retires shall be entitled only to the gratuity or retired pay assigned to the next lower rank.

(*b*) RETIREMENT ON ACCOUNT OF AGE, OR LIMITATION OF PERIOD OF SERVICE.

CONDITIONS OF RETIREMENT.

557. The director-general of Our Army Medical Service shall retire on completion of the term of his appointment; and the retirement of other officers of Our Army Medical Service (except quartermasters) shall be compulsory at the following ages:—

| | |
|---|---|
| Surgeon-general ... ... ... ... ... ... ... ... ... ... | 60 |
| Colonel, *promoted to the rank on or after the date of this Our Warrant* ... ... ... ... ... ... ... ... ... ... | 57 |
| *Colonel, promoted to the rank before the date of this Our Warrant (subject to Article* 568) ... ... ... ... ... ... ... ... ... | 60 |
| Other officers ... ... ... ... ... ... ... ... ... ... ... | 55 |

A major shall retire on completion of 25 years' service; or, if he fails to qualify for promotion, on the completion of 20 years' service.

A captain or lieutenant shall retire on completing six months' service on the supernumerary list.

A medical officer of Our Royal Malta Artillery shall be compulsorily retired on attaining the age of 55.

558. It shall be competent to Our Secretary of State to place a medical officer on the retired list after 30 years' service.

559. SCALE OF RETIRED PAY.

Director-General, Army Medical Service—
After three years' service as director-general—
With 30 years' service ... ... ... ... £1125 yearly.

Other officers of Our Army Medical Service and medical officers of Our Royal Malta Artillery.—Same rates as under "(*a*) Voluntary Retirement," except that the condition of three years' service in the rank shall be omitted, and that, in the case of a surgeon-major of Our Royal Malta Artillery, his retired pay, if retired on account of age, shall be 17*s.* 6*d.* a day, irrespective of service.

(*c*) RETIREMENT ON ACCOUNT OF MEDICAL UNFITNESS.

CONDITIONS OF RETIREMENT.

560. An officer of Our Army Medical Service or a medical officer of Our Royal Malta Artillery placed on the half-pay list on account of medical unfitness shall, if not previously retired, be retired from Our army at the expiration of five years from the date on which he was placed on the half-pay list, or, if reported by the regulated medical authority to be permanently unfit for duty, on the officer's application, at such earlier date as may be decided by Our Secretary of State.

561. An officer, whether on full or half-pay, placed in detention as a person of unsound mind, shall be retired from Our army, with the retired pay to which he would be entitled if reported by the regulated medical authority to be permanently unfit for duty. If his disability was not caused by military service, and he is not entitled to permanent retired pay by length of service, he shall receive temporary retired pay equivalent to the half-pay, and temporary retired pay, if any, which he would have received if his disability had been other than insanity.

562. SCALE OF RETIRED PAY.

Director-General, Army Medical Service—
Under three years' service as director-general, and after not less than 30 years' service ... ... ... £875 yearly.

Other Officers of Our Army Medical Service and of Our Royal Malta Artillery.—Same rates as under "(*a*) Voluntary Retirement," except that the condition of three years' service in the rank shall be omitted; and that in the case of a surgeon-major of Our Royal Malta Artillery his retired pay, if retired on account of medical unfitness, shall be 17*s.* 6*d.* a day, irrespective of service.

*Rates of Officers not Qualified for Retired Pay on Voluntary Retirement.*

If the unfitness was caused by military service—retired pay equal to the half-pay of his rank.

If not so caused, provided the officer has at least 12 years' service, retired pay equal to the half pay of his rank, for such period only, not exceeding five years from the date of the officer's retirement from Our army, after five years on half-pay under Article 306, as Our Secretary of State shall determine according to the merits of the case.

QUARTERMASTERS.

563. The retirement of quartermasters shall be governed by the regulations laid down in Articles 529, 531, 532, and 534.

*Secretary of State's Instructions.*

The term "rank," when used in the foregoing Royal Warrant, means "substantive rank," unless otherwise stated.

Officers who have served with the Royal Army Medical Corps (Militia) when embodied, or who, as officers of the Royal Army Medical Corps (Militia) or Royal Army Medical Corps (Volunteers), medical officers of Yeomanry or Volunteers, or as civil surgeons, served with an army in the field, after the 1st October, 1899, may be allowed to reckon such service towards retired pay and gratuity.

*Commander-in-Chief.*

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FREEMASONRY.—*St. Luke's Medical Lodge of Instruction.*—In order to suit the convenience of the majority of the members of the St. Luke's Medical Lodge of Instruction it has been decided to change the day of meeting from Monday to Tuesday. The first meeting under the new arrangement will be held at 9 P.M. on Tuesday, April 8th, in the Masonic Temple of the Criterion Restaurant, where after this date all the meetings will take place. April 8th being an officers' meeting, the various offices will be filled by the members of the Executive Committee, the chair being taken by W. Bro. T. Wakley, jun., W.M. of the Cheselden Lodge.

# ROYAL COLLEGE OF PHYSICIANS OF LONDON.

## ELECTION OF PRESIDENT.

AN extraordinary meeting of the Comitia was held on Monday, March 24th, SIR WILLIAM SELBY CHURCH, Bart., the President, being in the chair.

The PRESIDENT delivered the annual address, in the course of which he alluded to the different events which had occurred in connexion with the College during the past 12 months. One of the most important had been that H.M. the King had graciously allowed his name to continue on the roll of Honorary Fellows. The President then mentioned the royal honours which had been conferred on Fellows, Members, and Licentiates of the College, and also gave a list of the medals and scholarships which had been awarded. The gifts which had been made to the College were also noticed, special mention being made of the Fitzpatrick Lectureship on the History of Medicine. The various courses of lectures were then referred to, as were also certain alterations in the by-laws. The differences which had arisen between the College and the General Medical Council in reference to preliminary education and the registration of medical students were also commented on. In conclusion, the President read brief obituary notices of the following Fellows who had died during the past year:—Dr. John Sykes (Doncaster), Dr. Christopher Mercer Durrant (Ipswich), Dr. John Barclay, Dr. John Cavafy, Dr. Frederick Robinson (Eastbourne), Dr. John Louis William Thudichum, Dr. Edward H. Dickinson, Dr. Alexander Hughes Bennett, Dr. Robert King (Spalding), Surgeon-General Robert Harvey, and Sir William Guyer Hunter. Sir William Church then vacated the chair.

Sir SAMUEL WILKS proposed a vote of thanks to the President for his address and expressed a hope that it would be published. He also thanked Sir William Church for his assiduity in the performance of his duties as President and for the utter fairness which he had shown in the carrying out of all the duties which devolved upon him. The thanks of the College were accorded with acclamation.

A ballot then took place for the election of President, which resulted in the almost unanimous re-election of Sir William Church. The President was invested with the insignia of his office by the Senior Censor (Dr. T. T. Whipham) and gave his faith to the College. He then thanked the College in appropriate terms for the honour again conferred upon him.

The following communications were received: 1. From the University of Oxford inviting the College to send a representative to attend the Bodleian Tercentenary Commemoration on Oct. 8th and 9th, 1902. It was resolved that the invitation should be accepted and that the President should nominate a representative. 2. From the Secretary of the Royal College of Surgeons of England reporting certain proceedings of the Council on March 13th.

Sir DYCE DUCKWORTH proposed, and Dr. THEODORE WILLIAMS seconded, a motion to the effect that a stand should be erected outside the College for the convenience of Fellows and Members to view the Royal procession on the occasion of the coronation and that a committee should be appointed to arrange the details. The motion was carried.

The PRESIDENT then dissolved the Comitia.

# THE METROPOLITAN WATER-SUPPLY.

## V.[1]

### THE CHELSEA WATERWORKS COMPANY: SOME QUESTIONS FOR THE AUTHORITIES OF THE CITY OF WESTMINSTER AND OF THE BOROUGHS OF CHELSEA AND OF FULHAM.

THE Chelsea Company is one of the oldest of the present metropolitan waterworks. Established under a charter granted by George I. in the year 1723 to the Governor and Company of Chelsea Waterworks, it was designed to do for the City of Westminster what Myddelton's New River had already accomplished for the City of London. It was found that "by reason of the great Increase of Buildings and Inhabitants in and about our City of Westminster and the Liberties thereof [we are quoting from the charter] there are greater Occasions for Water, for the Safety and necessary Uses of the said inhabitants, than are supplied by the Water Works now in being, and for want thereof many great and dangerous Inconveniences do happen which would be remedied and great advantages accrue if new Water Works were erected in convenient places for providing and supplying the same Inhabitants with good and wholesome Water from our River Thames by one or more Cutt or Cutts, to be made at any convenient place or places between the Grounds belonging to our Royal Hospital at Chelsea and the Houses and Grounds commonly called the Neat Houses." The first reservoirs used were situated in the parks and the small sunken garden in Hyde-park close to Park-lane marks the site of one of them. The Chelsea Company now supplies a very small part only of the area which it is authorised to serve which includes Hammersmith, St. Mary's Paddington, St. Anne's Soho, Bloomsbury, Marylebone, St. Mary-le-Strand, and St. Paul's Covent-garden. Amongst the places actually supplied are Fulham, Chelsea, Walham-green, and Westminster. The metropolitan city of Westminster and the new metropolitan borough of Chelsea are connected with the Chelsea Company historically and their inhabitants have something more than a sentimental interest in the way in which the undertaking is now carried out.

The general arrangements of the company's works are comparatively simple. The water is abstracted from the Thames at West Molesey, where the storage and subsidence reservoirs are situated. Some water is also obtained from the gravel bed at this station. From West Molesey the water flows by gravitation or is pumped to Seething Wells, Kingston, where it is filtered and whence it is pumped to reservoirs situated on Putney Heath. From the reservoirs the greater part of the water is distributed by gravitation, but some is, or lately was, pumped through a stand-pipe, by which means an additional head of 22 feet of water can be obtained.

The Chelsea Company has the credit of having made the first filter-bed ever used in London, but that is a matter of somewhat ancient history for it dates back three-quarters of a century. Some improvements have been made during the last few years in the company's works, one of the most important of which has been a considerable increase in the capacity of reservoirs for the subsidence and storage of the water before filtration; it will be noticed also that the storage capacity for filtered water has been doubled. Table I. shows the nature and amount of the chief changes which have taken place between December, 1897, and December, 1901.

TABLE I.—*Showing the Nature and Amount of the Chief Changes effected between December, 1896, and December, 1901.*

| — | | In the year 1897. | In December, 1901. |
|---|---|---|---|
| Supply | Average daily supply in gallons | 12,283,789 | 11,719,839 |
| | Percentage delivered for other than domestic purposes, exclusive of waste | 20 | 20 |
| | Number of houses supplied | 37,594 | 39,447 |
| | Percentage of houses on constant supply | 90 | 100 |
| | Estimated population supplied | 276,691 | 290,330 |
| Reservoirs, subsiding and storage, unfiltered water | Number | 4 | 4 |
| | Area in acres | 40 | 40 |
| | Available capacity in gallons | 140,000,000 | 190,000,000 |
| Storage filtered water reservoirs | Number | 3 | 5 |
| | Capacity in gallons | 11,000,000 | 22,000,000 |
| Filters | Number of beds | 7 | 8 |
| | Area in acres | 7 | 8 |

[1] Articles I., II., III., and IV. appeared in THE LANCET of March 1st p. 614), 8th (p. 632), 15th (p. 767), and 22nd (p. 842), 1902, respectively.

There does not appear to be any reason why the citizens of Westminster should not desire to have water as good in quality as that with which the citizens of London and the people of Kent are supplied by the companies which purvey to them. A glance at Table II. will show that at the present time the Chelsea Company distributes water of quality inferior to that supplied by the New River and the Kent companies.

TABLE II.—*Showing the Results of Analysis expressed in Parts per 100,000 of Organic Carbon and of Organic Nitrogen in the Water supplied by the Chelsea Water-works Company, the New River Company, and the Kent Company in each Month of the Year 1901 and in the Month of January, 1902. (Compiled from the Reports of the Results of Analysis made by Dr. T. E. Thorpe, F.R.S., on behalf of the Local Government Board.)*

| Year and month. | Organic carbon, expressed in parts per 100,000. | | | Organic nitrogen, expressed in parts per 100,000. | | |
|---|---|---|---|---|---|---|
| | Chelsea Company. | New River Company. | Kent Company. | Chelsea Company. | New River Company. | Kent Company. |
| 1901. | | | | | | |
| January ... ... | 0·210 | 0·070 | 0·039 | 0·032 | 0·010 | 0·008 |
| | 0·210 | — | — | 0·027 | — | — |
| February ... ... | 0·230 | 0·073 | 0·044 | 0·026 | 0·012 | 0·010 |
| March ... ... ... | 0·246 | 0·141 | 0·043 | 0·026 | 0·013 | 0·010 |
| April ... ... ... | 0·181 | 0·124 | 0·043 | 0·023 | 0·012 | 0·008 |
| May ... ... ... | 0·138 | 0·081 | 0·042 | 0·016 | 0·013 | 0·006 |
| June ... ... ... | 0·103 | 0·068 | 0·036 | 0·015 | 0·009 | 0·007 |
| July ... ... ... | 0·110 | 0·062 | 0·058 | 0·014 | 0·010 | 0·012 |
| August ... ... ... | 0·139 | 0·049 | 0·038 | 0·017 | 0·007 | 0·005 |
| September ... ... | 0·118 | 0·115 | 0·037 | 0·016 | 0·013 | 0·009 |
| October ... ... | 0·107 | 0·046 | 0·058 | 0·017 | 0·010 | 0·007 |
| November ... ... | 0·132 | 0·070 | 0·055 | 0·021 | 0·009 | 0·008 |
| December ... ... | 0·115 | 0·093 | 0·048 | 0·012 | 0·009 | 0·006 |
| 1902. | | | | | | |
| January ... ... | 0·279 | 0·077 | 0·059 | 0·035 | 0·008 | 0·006 |

The authorities of Westminster, of Chelsea, and of Fulham cannot too clearly understand that large powers are given to them in regard to the exercise of control over the quality of the water which is supplied within their districts. Are these authorities satisfied? Are they content that the water supplied within the districts over which they have jurisdiction should receive water less good in quality than that received by the citizens of London and the rural inhabitants of Kent? If they are satisfied with this state of things no more need be said to them. If they are not satisfied the present is the time at which they should say so. If they have not considered the matter at all they have no time to lose, otherwise they may find their rates increased by the establishment of a Water Board which will be compelled to buy the existing undertakings.

It is, of course, unfortunate for the people of London that this matter is forced upon them before the metropolitan boroughs have had much more than time to settle such things as the selection of seals and of the insignia of office. There is, however, one thing which the officers of the metropolitan boroughs can now do without much expense and which may prove of the greatest service. They can determine whether in fact a constant water-supply is given in all the districts which are stated to have it. The only "official" information which we have is derived from the periodical reports of the Water Examiner. In many cases the statements given in these reports are supplied directly by the officials of the metropolitan water companies. These statements are printed for his Majesty's Stationery Office, published by the Water Examiner, and are then considered to be "official." The late Major-General Scott, when he was the Water Examiner, disclaimed responsibility for the information supplied to him and made that point quite clear when he was sitting on the Llandaff Commission. The Chelsea Company professes to give constant service to all the houses in its district. In the Water Examiner's monthly report for January, 1902 (the last one published), the "number of supplies to houses, &c" given by the Chelsea Company is stated to be 39,440 and the "number of houses, &c., supplied on the constant system" is 39,440.[2] Would it surprise the civic authorities of Westminster to discover that as a matter of fact constant service is *not* given to all the houses in the city over which they have jurisdiction? Have they made any inquiry into this question? If they have not it is by no means too late for them to do so. It may perhaps be worth while in this connexion to point out that the importance of constant service and some of the causes which may lead to its absence were given by Major-General Scott in the twenty-seventh annual report of the Local Government Board. The passages referred to are as follows: "The crucial test of efficiency as far as water-supply is concerned is the maintenance of sufficient pressure in the supply-pipes of consumers in the case of constant supply at all hours of the day or night. ..... Insufficiency of initial pressure or of capacity in the trunk or subsidiary mains will be indicated by unduly low pressure at the hours when the draught on them is greatest. Failures of this description can be discovered by pressure gauges applied to the mains in various localities."

Is it too much to ask that the representatives of the Metropolitan Boroughs of which the inhabitants are supplied by the Chelsea Company will avail themselves of the power which they possess to inquire into a matter which so deeply affects the health and the comfort of those placed under their care?

## THE OUTBREAK OF CHOLERA IN THE HEDJAZ.

BY THE BRITISH DELEGATE TO THE OTTOMAN BOARD OF HEALTH.

ON March 5th news was received in Constantinople of the appearance of cholera among the pilgrims at Medina. 40 deaths had occurred in a caravan which arrived at Medina from Mecca on the 1st; 70 more deaths had occurred in a second caravan; and other caravans were arriving with cases of the disease among them. Each caravan told the same story—that the sickness had appeared amongst them after leaving Rebouk, on the road between Mecca and Medina. On the two following days the deaths in caravans arriving in Mecca were respectively 74 and 88. At this period the flow of pilgrims was mainly from Mecca towards Medina. There a very short stay is usually made, with the object of visiting the tomb of the Prophet, and almost immediately after the caravans set out again on their return journey to Mecca. Hence, after the 8th the number of deaths from cholera among pilgrims at Medina began to diminish; on the 9th there were but 38, and on the 10th only 12. As early as the 7th deaths from the disease began to be heard of among the residents of the town. Up to the 15th the total number of known deaths among pilgrims in Medina had been 328 and among the residents 43.

In the meantime cholera had also appeared in Mecca. Suspicious cases had, indeed, occurred there as early as Feb. 20th and between that date and March 6th 12 such cases had been observed. On March 5th the disease was declared to be cholera. As the pilgrims are already beginning to arrive at Mecca on their return from Medina, the deaths in the former city are rising as those in the latter are decreasing. Already, up to the 17th, 95 deaths from cholera are known to have occurred in Mecca. Nor has the port of Jeddah escaped; the deaths there have numbered 22.

As to the origin of this outbreak nothing is at present known. The early cases in Mecca were all among Cossacks or Russian pilgrims from Kazan on the Volga. No cholera has existed there or in any other part of Russia for many years past. It is, indeed, necessary to suppose that the infection has in some way been brought to the Hedjaz from one of its permanent homes in the East. One of the caravans at Medina in which cases occurred being composed of Javanese pilgrims, suspicion has fallen on Java as a possible source of infection. Cholera has been present in Java for some months past and a strict inquiry has been ordered by the Ottoman Board of Health, both into the history of the earliest cases at Mecca and Medina and into the records of

[2] See the report, p. 8, columns 7 and 8 of the table there given.

all ships that may have carried pilgrims from Java to the Hedjaz during the past few months.

The Haj, or Mussulman pilgrimage, of the present year is far more numerously attended than any of its immediate predecessors has been, at least since the appearance of plague in India six years ago. The total number of pilgrims is believed to be nearly 250,000. The increase in numbers is largely accounted for by the permission granted this year by the Russian Government to its subjects to undertake the Haj—permission which has been withheld for some years past. During the months of January and February Cossacks, Tartars, Bokhariots, and Central Asiatics of all kinds literally poured into Constantinople and were sent off by ship to the Red Sea as rapidly as ships could be provided. At the personal instance of His Majesty the Sultan the shipping companies reduced the fares for pilgrims to a lower figure than they have perhaps ever been carried at before.

The fêtes at Mecca will shortly come to an end with the three days of Courban Bairam, and after Sunday, March 23rd, the pilgrims will begin to disperse in all directions. For the measures in the Hedjaz itself the local authorities—the Vali of the Hedjaz and the Grand Sherif of Mecca—have been mainly responsible, the Ottoman Board of Health in Constantinople being able to do no more than telegraph advice as to the general principles to be followed and to place at their disposal the services of the medical officers and sanitary staff in the Hedjaz and in Camaran. A proposal made by more than one of the foreign delegates to the Board that the pilgrimage should be broken up at once and the pilgrims sent to their homes before completing the Haj was rejected as impracticable. Any attempt of the kind would, indeed, only have led to more troubles than those it was intended to prevent. The prescribed set of movements in and near the holy places of Islam had to be carried out at the dates fixed. The most that could be done was to diminish the evil as much as possible—to provide for the medical supervision of the pilgrims and the isolation and treatment of the patients.

For the measures concerned in the return of the pilgrims from Arabia to the rest of the world the Ottoman Board of Health has, on the other hand, the whole responsibility. The principle upon which these measures have been based has been the dispersal of the pilgrims as rapidly and safely as possible after the fêtes are over in order to avoid overcrowding and a still further intensifying of the epidemic in Mecca and Medina. The great caravans whose return route is by land—such as the sacred caravan with the Holy Carpet for Damascus and the north (the *Mahmel-i-Sherif*), the Bagdad and Nedjif caravans for the north-east, the Yemen caravan for the south—will be started from Mecca at the earliest possible moment instead of remaining there for 10 or 15 days, as in ordinary years. Pilgrims whose return route is by sea from Jeddah will be started from Mecca in batches, according to the number of boats ready for them at Jeddah. The Government has been urged to provide extra boats. Before entering Jeddah the pilgrims will be subjected to a medical inspection and disinfection of their clothes and effects, and before embarking on board ship they will again be medically inspected. Each ship will, as far as possible, be accompanied by a medical man. Pilgrims returning by sea to Yemen, the Persian Gulf, and Persia will undergo five days' quarantine at Camaran before being allowed to proceed to their destination. Those coming north will, in addition to detention at El-Tor on the Gulf of Suez, be subjected to 10 days' quarantine in a Turkish lazaret.

March 18th.

## ROYAL COLLEGE OF SURGEONS OF ENGLAND.

AN ordinary meeting of the Council was held on March 20th, Mr. HENRY G. HOWSE, the President, being in the chair.

The PRESIDENT reported that he had ascertained that it was the pleasure of His Majesty the King to continue an honorary Fellow of the College and that on behalf of the Council he had written to express appreciation of this mark of His Majesty's continued favour. This statement was received with acclamation.

The PRESIDENT reported that in accordance with the wishes of the Council he had attended as the delegate of the College the celebration of the jubilee of the Owens College, Manchester, on March 12th and 13th, and that on behalf of the Council he had presented an address of congratulation.

Sir WILLIAM H. BENNETT, K.C.V.O., was re-elected, and Mr. F. S. EVE and Mr. W. WATSON CHEYNE, C.B., were elected, members of the Court of Examiners.

The PRESIDENT stated that the vacancies on the Board of Examiners in Dental Surgery occasioned by the retirement from the Court of Examiners of Mr. H. W. Page and Mr. W. J. Walsham would be filled up at the next meeting of the Council.

Mr. ALFRED COOPER was appointed the delegate of the College at the Second International Conference in regard to Syphilis and Venereal Diseases to be held at Brussels from Sept. 1st to 6th, 1902.

A letter was read from the Vice-Chancellor of the University of Oxford stating that the University proposes to commemorate this year the three-hundredth anniversary of the opening of Sir Thomas Bodley's Library, and inviting the College to send a representative to attend the commemoration ceremonies on Oct. 8th and 9th. The President was appointed.

A letter was read from the Secretary of the University of Birmingham asking the Council to appoint a representative to serve on the Court of Governors of the University for the remainder of the term—i.e., to the end of 1902—for which the late Sir William Mac Cormac, Bart., K.C.B., K.C.V.O., was appointed. The President was appointed.

A letter was read from Mr. Thomas Bryant reporting the proceedings of the General Medical Council at its late session. The thanks of the Council were given to Mr. Bryant.

A letter was read from Dr. Liveing reporting that at a meeting of the Royal College of Physicians of London on Feb. 18th, 1902, the report, dated Feb. 3rd, 1902, of the Special Conjoint Committee on the Laboratories was approved and adopted and that the following were appointed delegates to serve on the Conjoint Committee for organising a scheme for cancer research, viz.:—Sir William S. Church, Bart., President, Dr. T. T. Whipham, Senior Censor, Sir William H. Broadbent, Bart., K.C.V.O., Dr. P. H. Pye-Smith, Dr. J. F. Payne, Dr. J. Rose Bradford, and Dr. John F. W. Tatham.

The PRESIDENT reported the delivery of the Arris and Gale Lectures by Dr. T. G. Brodie; of the Erasmus Wilson Lectures by Dr. Charles Powell White; and of lectures by Professor W. McAdam Eccles and Professor F. G. Parsons.

## ASYLUM REPORTS.

*London County Asylum, Colney Hatch (Report for the year ending March 31st, 1901).*—The average number of patients resident during the year was 2543, including 922 males and 1621 females. The admissions during the year amounted to 500—viz., 182 males and 318 females. Of these 394 were first admissions. Dr. W. J. Seward, the medical superintendent, states in his report that hereditary influences tending to insanity existed in 28 per cent. of the cases admitted, that in 28 per cent. previous attacks of insanity had been noticed, and that 15 per cent. of the admissions were due to alcoholic intemperance. 30 patients among the admissions were over 70 years of age. The number of Jewish patients admitted was 75 and at the end of the year there were 241 Jewish inmates in the asylum. During the year 242 patients were discharged as recovered—viz., 80 males and 162 females, or 9·5 per cent. of the average number resident. The deaths during the year amounted to 212—viz., 80 males and 132 females, or 8·3 per cent. as calculated on the same basis. Post-mortem examinations were made in 177 cases. Of the deaths four were due to renal disease, five to influenza, 10 to pneumonia, 12 to cardiac disease, 13 to cancer, 14 to senile decay, 18 to epilepsy, 26 to colitis, 33 to general paralysis of the insane, 38 to phthisis and other forms of tuberculosis, and the rest to other causes. Among eight Jewish male patients who died six suffered from general paralysis, a fact which illustrates the prevalence of this disease amongst Jewish patients. No inquest was held at the asylum during the year but there was one in the case of a male patient who died suddenly from heart disease while away with his relatives "on trial," and a verdict of "Death

from natural causes" was returned. No case of suicide has occurred during the year. "The epidemic of colitis or asylum dysentery which commenced two years ago has continued throughout the greater part of the year, 62 cases having occurred with 26 deaths. The disease has been almost confined to the female wards, very few male patients having been attacked." The Commissioners in Lunacy state in their report that the wards were bright and cheerful, that the dress of the patients was neat, that the nursing was skilled and careful, and that the medical case-books were kept with care and intelligence. The sub-committee of the asylum records a profit of £1843 on the farm and the expenditure of £7124 on repairs, alterations, and improvements.

# Public Health and Poor Law.

## REPORTS OF MEDICAL OFFICERS OF HEALTH.

*Wimbledon Urban District.*—A case of some general interest was dealt with in this district during 1901. A complaint was received by the district council that certain class-rooms in a high school for girls were overcrowded and in consequence the inspector of nuisances sought to obtain entry to the premises. The head mistress refused the inspector's entry and subsequently repeated such refusal. The bench before which the case was then taken made an order for the inspector's admission but in the meantime an appeal was lodged and allowed on the ground that the scholars were not inmates of a house or part of a house within the meaning of Section 91 of the Public Health Act, 1875. We are glad, however, to note that the Wimbledon District Council has decided to appeal to the Divisional Court; the council is to be congratulated on endeavouring to perform a public service.

*Haydock Urban District.*—Infantile diarrhœa was a prolific cause of death in this district during 1901 and in the west ward of the town the infantile mortality reached the appalling figure of 327 per 1000 births. Dr. T. E. Hayward has, he reports, noted a deficient vitality amongst the newer immigrants to the town and most of these weaklings have settled down in the west ward. It is to this degeneracy plus the ignorance and neglect which are apt to accompany it that Dr. Hayward attributes this excessive infantile toll and he urges that arrangements should be made with St. Helens for a supply of their sterilised milk. Dr. Hayward is very much at home when dealing with vital statistics and he has a way of clothing the dry bones of figures with very attractive language. He tells us in his last annual report that the "District of Haydock may be looked upon as one of the many channels, some larger some smaller, through which a stream of life is continuously flowing, fed partly by rills of immigration from other districts and partly by those emergings from the unknown which we call Births. As the stream flows along it is always being drawn from, partly by leakages which find their way into other channels, but there are also ever going on those passings away into the unseen which are called Deaths." Dr. Hayward regards the years of human life from the point of view of quality as well as quantity and he thinks that the former, estimated as diminished disease and pain and as increased happiness and well being, is as important as quantity. We are afraid that the quality of life has not received so much attention as it should have done at the hands of hygiene and the near future may very well remedy this omission.

*Chelmsford and Maldon Rural Districts.*—The provision of a water-supply in rural districts is frequently a sufficiently difficult matter and often it is necessary to be content with something short of the ideal. The shallow well as usually constructed is an eminently dangerous source of supply, but, as was pointed out by Professor Koch several years ago, it is not difficult to render the water of such wells relatively safe. The suggestion was to convert the shallow well into what is practically an Abyssinian well by placing in it a pipe perforated at the lower end and by filling up the well itself with gravel. The principle upon which this suggestion is based is to prevent insufficiently filtered water from entering the well—or the pipe in the case of an Abyssinian well—but the same end can be attained by properly steining the well for the first nine to 12 feet of its depth, and raising the entrance to such well a little above the ground level, the top itself being covered over with a stone or iron lid which is impermeable to surface washings. The Chelmsford Rural District Council, acting upon the advice of Dr. J. C. Thresh and its surveyor, has drawn up simple diagrams for circulation in the district indicating how shallow wells can be safely constructed and how existing wells of this nature may be converted. This seems to us to be a very useful measure in country districts, as the well-sinkers err rather from ignorance than from a desire to construct improper wells. The dairies and cowsheds of this district were inspected during 1901 but the results were far from encouraging either to the district council or to the milk-consumers. Want of cleanliness and a scarcity of water very generally obtained and the cows themselves were "very frequently in a disgustingly filthy condition, their udders and hindquarters being covered with fæcal matter." This story would, according to our own experience, have to be repeated in respect of the majority of rural districts and the sooner the recommendations of the Preservatives Committee as to the abolition of all preservatives from milk become law the sooner shall we see a wholesome reform in the direction of the cleansing of cowhouses and cows and of the straining and cooling of milk. In the Maldon district diphtheria antitoxin was used as a preventive and apparently with good results. This experience will be useful to the Colchester Town Council which for some time has had difficulties in bringing about the use of this valuable agent. The eating of imperfectly cooked cockles collected from a sewage-polluted foreshore was responsible for several cases of enteric fever at Maldon during 1901.

*Barnes Urban District*—The council of this district found itself in difficulties during 1901 as to isolation accommodation for small-pox cases, the former arrangement with the Highgate Hospital having come to an end with the disestablishment of that institution. All overtures to small-pox hospital authorities, including the Metropolitan Asylums Board, were met with refusal and attempts to erect a building on Sheen Common were equally unsuccessful. Finally the Surrey County Council was appealed to and it was able at the end of the year to make arrangements with the new Joint Small-pox Hospital Board for Croydon and Wimbledon by means of which the Barnes cases will be accommodated at Cheam.

*Kingston-upon-Thames Borough.*—The Kingston Town Council has apparently got rid of its responsibilities in the matter of the isolation of small-pox patients by paying an annual subsidy to the small-pox hospital at South Mimms. By this means five beds are reserved at the hospital for Kingston cases. There is, we expect, room for more hospitals of the South Mimms type, not only for the isolation of small-pox but also for that of other infectious diseases; indeed, the upper and middle classes are not well off in the matter of isolation accommodation and as a general rule it is a choice between the hospitals of the Metropolitan Asylums Board and staying at home. For patients suffering from scarlet fever there is the London Fever Hospital, where there are a few private wards, and also the Mary Wardell Convalescent Home, where paying patients recovering from scarlet fever are also taken in.

# THE SERVICES.

## ROYAL NAVY MEDICAL SERVICE.

THE following appointments are notified:—Surgeons: H. W. B. Shewell to the *Ramillies* and J. P. H. Greenhalgh to the *Victorious*.

## ROYAL ARMY MEDICAL CORPS.

Major R. P. Bond is posted to the Station Hospital, Shorncliffe, and Lieutenant-Colonel H. J. Barratt is posted to the Station Hospital, Canterbury. Captain J. Grech is to proceed to Aldershot for duty.

## IMPERIAL YEOMANRY (IN SOUTH AFRICA).

26th Battalion: F. W. Moir to be Medical Officer, with the temporary rank of Captain. Dated Feb. 7th, 1902.
33rd Battalion: A. F. Kennedy to be Medical Officer, with the temporary rank of Captain.

## SOUTH AFRICAN WAR NOTES.

Lieutenant G. G. Delap, R.A.M.C., D.S.O., and Civil Surgeons Adam and Wood are returning from South Africa to England.

Captain T. J. Lenehar, R.A.M.C., Lieutenant A. J. W.

Wells, and Civil Surgeons Sterne, Bowen, Pickering, Wilkinson, and Buckley have been discharged from hospital to duty.

### THE MEDICAL JOURNAL OF THE ITALIAN NAVY.

The *Annali di Medicina Navale* enters upon its eighth year of existence with a double number comprising the parts for January and February, 1902, and consisting of 260 pages, rather more than half of which are devoted to reviews. In a prefatory note the editors apologise for the delay which has arisen from unforeseen causes and is by no means attributable to a lack of material. As a matter of fact they receive a continuous influx of important papers from their colleagues, some of whom are fortunate enough to be following university courses in Italy or elsewhere, while others are charged with the care of the sick in the various naval hospitals, with the sanitary superintendence of these and other establishments, with the supervision of the emigration department, and, in fine, with general medical and sanitary duty in different quarters of the world. Having such a wealth of matter there can be no difficulty in conducting the *Annali* in a satisfactory manner, but it is also the intention of the editors to keep their readers well abreast of all scientific progress wherever it may occur. In the present issue the leading article is by Dr. C. M. Belli who discusses the important question of "Bilge-water in Men-of-War" at considerable length and with much erudition. A shorter paper by Dr. Enrico Bindi on Operative Procedure in Cardiac Traumatic Lesions is also of considerable interest, being admirably illustrated.

### SUDDEN DEATHS IN THE RUSSIAN ARMY.

During the quinquennium ending December, 1898, there were 537 cases of sudden death among the soldiers occupying the Warsaw district, 204 of the fatalities being ascribed to disease, 223 to accident, and 110 to suicide. Dr. Scherkin, who is the author of a statistical paper on the subject in the *Voienno Medicinski Journal* for October, 1901, does not mention the exact strength of the troops concerned but merely enumerates the various units as follows: infantry, 57 regiments; Chasseurs, seven corps; garrison infantry, 16 regiments; garrison artillery, six battalions; field artillery, 11 brigades; siege artillery, seven batteries; cavalry, 25 regiments; Cossacks, six regiments; sappers, four battalions; pontoon-trains, two battalions; and railway corps, one battalion—in all 142 units, probably comprising about 125,000 men. Deaths from disease were classified as sudden when less than 24 hours had elapsed after admission to hospital.

### MEMORIAL TO THE LATE SURGEON-GENERAL W. NASH.

The following subscriptions to the above fund have been received since our last notification:—Lieutenant-Colonel E. A. H. Roe, £1 1*s.*; Colonel F. W. Moore, 10*s.*; and Sir J. Fayrer, K.C.S.I., £2 2*s.*, making a total of £23 2*s.*

# Correspondence.

"Audi alteram partem."

## SERUM REACTION IN MALIGNANT ENDOCARDITIS.

*To the Editors of* THE LANCET.

SIRS,—In THE LANCET of March 22nd, p. 817, is a report by Dr. W. Hale White and Mr. W. C. C. Pakes on a case of malignant endocarditis giving the serum reaction (so-called "Widal" reaction). Upon this I should like to offer a few remarks. I know that it is not quite fair to either author or critic to base arguments on an abstract report. Not having heard the paper read I must excuse myself that it is all I have to go upon. The points at issue are of some importance regarding the value of the test. The authors base the title of their paper on the fact that the serum in this case gave a reaction when diluted 1 in 20 with four strains of the typhoid bacillus and with a fifth partially at 1 in 200. Now I would submit that a reaction occurring in a dilution of 1 in 20 will not suffice for the diagnosis of enterica. The dilution is not high enough. This was pointed out some years ago by myself and others. It is, of course, not often that a blood is found which does react in this dilution, but they do occur occasionally, even in normal individuals. In the case of the fifth sample of typhoid bacillus the fact that it reacted partially in a dilution of 1 in 200 to my mind throws some doubt on the identity of the bacillus or its virulence must have been minimal.

I do not gather from the abstract what the time-limit was or whether the reaction was obtained only after the treatment with anti-streptococcus serum had commenced. Since many bloods will agglutinate if given sufficient time and since horse-serum also often spontaneously agglutinates typhoid bacilli in comparatively high dilution I think these are points of importance, especially the latter, since the reaction seems to have appeared only after treatment had been begun. Should any number of cases occur which give a positive reaction with suitable technique in cases *not* enterica the test will be practically valueless. I have not myself in the course of some experience (based on a dilution of a 1 in 33 and 30 minutes' time-limit) seen any *positive* results in cases where enterica, either past or present, or conferred immunity could be definitely excluded. *Negative* results in cases which are clinically thought to be enterica are comparatively common, especially in the early days of the disease; but in view of recent work by various investigators, as well as of some observations which have come under my own notice, I feel certain that the clinical diagnosis in some of these negative cases has not always been correct.

I am, Sirs, yours faithfully,

Liverpool, March 24th, 1902. ALBERT S. GRÜNBAUM.

## DRUNKENNESS AND THE ABUSE OF NARCOTICS.

*To the Editors of* THE LANCET.

SIRS,—

"Intemperance, like a roaring flood,
Is sweeping o'er our land;
Its dire effects in tears and blood
Are traced on every hand."

Everybody deplores drunkenness. Everybody admits that something should be done to mitigate the evil. Everybody will not agree about how the mitigation is to be accomplished. Total abstainers desire their way; prohibitionists and local-vetoists desire theirs. Others think that it would be sufficient to restrict the number and hours of public-houses and to abolish all grocers' licences. The latest proposal hereabout is to make the publicans in populous places—in specified areas of Glasgow and Dundee—close at 10 P.M., the same as in country districts. The most pernicious drinking is in the morning, and it would be much better not to allow any alcoholic beverages to be sold before noon.

It is often said that a nation cannot be made sober by legislation: this nation will never be made sober by any other means. The laws of a nation that would be happy and prosperous should be like the unwritten laws of a well-ordered household, giving every facility to all its members to do well but no facilities to do otherwise. When a member of a family betrays a weakness for alcoholic beverages the use of these beverages in that house is either entirely abolished or very much restricted, and if the same restrictions could be kept up when that weak member was outside the house he would never become, as too often happens, a drunkard and a disgrace to the family. The other members of the family may feel these restrictions somewhat irksome; but they cheerfully acquiesce in the new arrangements for the sake of their weaker member. In the greater family—the nation—it is well enough known there are many weak members, and if restrictions be put upon the procuring of alcoholic beverages which may be somewhat irksome to many, they should not complain for the sake of the weaker members. The total abolition of drunkenness might be quickly accomplished by the Government undertaking the making, importing, storing, and distributing of all alcoholic beverage and, instead of granting licences to publicans to sell these to Tom, Dick, and Harry in indefinite quantities, granting descriptive licences to whoever desires to use these luxuries, with coupons attached for each day's allowance to be given up when obtained. A small sum to be paid for the licence which may be valid for a week, month, or year, and the drink to be paid for when obtained. The day's allowance for an adult should not be more than five fluid ounces of proof spirit, or the alcoholic equivalent of that in any other beverage; and the licence coupons could be so arranged that the day's allowance could be obtained at two, three, or four

times. Special licences could be granted as now for special occasions and to responsible persons who would guarantee that there would be no abuse of the beverages; and as all the alcoholic drinking of the country would be under the eye of the Government any abuse of these licences or privileges could soon be put down.

About 30 years ago a circular was sent to all the medical men in this district "asking them to refrain as much as possible from prescribing alcohol in any form." My reply was that I prescribed castor oil when required and that I expected when the patients got better they would cease taking it, and that I expected that if I prescribed any alcohol the patients would do the same. I received another notice that many drunkards alleged that the beginning of their bad habits took place when they were under medical treatment, which may be quite true in some cases. Certainly it is perfectly true that many women begin to use alcohol in some form for painful menstruation and during puerperal weakness, and many others have begun to use narcotics by a medical man being either too busy or too lazy to write a prescription, telling his patients to go into the nearest druggist's and purchase a narcotic and take so much of it. Much drunkenness and narcotic-consuming might be prevented by medical men always and only administering alcohol and narcotics medicated in a prescription, not to be repeated unless sanctioned by the prescriber.

Thanking you in anticipation of your finding room in your valuable journal for the above, and hoping that other members of our profession may be induced to state their opinions how best to combat these evils,

I am, Sirs, yours faithfully,

Paisley, March 18th, 1902. J. B. HUNTER.

## A NATIVE REMEDY FOR BLACKWATER FEVER.

*To the Editors of* THE LANCET.

SIRS,—I have read with great interest the notes by Dr. D. R. O'Sullivan-Beare in THE LANCET of Feb. 1st, p. 282, on the native remedy for blackwater fever and I should like to offer a few suggestions on this most important subject.

Before dealing with the question of the remedy there are several points raised in this paper as to the nature of blackwater fever which call for some comment. In the five cases quoted the patients had either never tasted quinine or at least had not taken it for two months previously, so that this adds one more to the many facts which militate against the dangerous doctrine that quinine is the cause of blackwater fever which has prejudiced large numbers against the use of quinine. I most emphatically differ from Dr. O'Sullivan-Beare in his view that blackwater fever is not a form of malarial fever, and I consider that "the test of practical experiment" is in favour of the use of quinine in its treatment. I believe it to be an assumption which has not been proved that the hæmoglobinuria is caused by a toxin rather than by the parasite itself, and the idea which is suggested that nephritis is set up in *ordinary* cases is in my opinion an erroneous one, the albumin present being due to the presence of hæmoglobin. The mention of two cases of blackwater fever occurring among negroes is interesting, as I do not think this is common, and it will be still more important if the information can be borne out which Dr. O'Sullivan-Beare has obtained concerning some tribes in the interior, "amongst whom blackwater fever would appear to be endemic"; but may not this be hæmaturia due to bilharzia hæmatobia?

Having delivered myself of these criticisms I desire to thank your correspondent most heartily for the interesting particulars which he has given us concerning this native remedy, for although I do not agree with his estimate of the value of quinine in this disease there can be no question that we are in need of other remedies, and I think that after the testimony we have received *Cassia Bearcana* should receive a full trial. As to its mode of action and the reason for its usefulness a few remarks may not be out of place. The most important points in the treatment of blackwater fever, apart from any specific malarial treatment, are to maintain the flow of the urine and to deal with the vomiting which is often a dangerous feature of the malady, making it difficult to administer either food or medicine and weakening the patient. It seems to be a point in the prescription of this medicine to give it with a great deal of fluid, and probably this assists in promoting free diuresis, even if the drug itself is not a diuretic. But what interests me more is the influence which it appears to have upon vomiting. In the cases mentioned vomiting seems to have been a prominent symptom and the medicine seems to have relieved it. Perhaps even more striking than the effect of the remedy upon blackwater fever is the result obtained in so-called bilious remittent fever. I have sometimes wondered whether the number of cases classed under this head are all of them malarial; at all events the trouble here is usually vomiting and this the medicine seems to relieve. If this is so, the drug may be useful in other cases where vomiting is a troublesome symptom and it is to be hoped that all who use it will note carefully the effects produced, so that we may not be acting in the dark in prescribing the remedy.

I am, Sirs, yours faithfully,

CHARLES F. HARFORD-BATTERSBY.

Livingstone College, Leyton, E., March 24th, 1902.

## VAGARIES OF VACCINIA.

*To the Editors of* THE LANCET.

SIRS,—From personal experience of the vagaries of vaccinia I am intensely interested in the clinical note sent you by Dr. J. W. Washbourn, published in THE LANCET of March 8th, p. 664. It is within the recollection of many of your readers that when the Local Government Board first introduced the glycerinated calf-lymph it was found to be very irregular and uncertain in action. A not uncommon experience was to make four careful scarifications, insert the glycerinated calf-lymph from the same tube in each, and then to find quite a variety of vesicles, papules, blebs, and minute vascular spots, these last resembling small nævi, none of them coming to maturity and disappearing without leaving a cicatrix; one class of immature vesicles left a slight scar more like staining of the skin than a scar.

I have notes of a case almost identical with the one recorded by Dr. Washbourn. In March, 1899, I vaccinated a child, a female, aged two years, in four places. Two of the scarifications developed into mature vesicles leaving well-marked cicatrices; the other two were simple blebs, with no areola; the serous fluid was re-absorbed, the vesicles shrank and never scabbed. The mark left was more like a stain than a cicatrix. After a lapse of nine months the mother complained that whenever the child had a cold the vaccination spots came back. At first I treated this piece of curious information as purely mythical—on a par with many of the funny things said about vaccination. However, to please the mother I asked her to let me see the child's arm when she had the "spots" on again. This she did in the course of a few weeks, when, to my surprise, at the site of the *imperfect vesicles only* the superficial layer of the epithelium was raised in the form of two or three small vesicles resembling exactly a group of herpes; be it noted there were none in the cicatrices left by the mature vesicles. I saw them two days after the child scratched them; they were red at the base and covered by a scab. To prevent further scratching the arm was dressed; the sores soon healed and left *no scars*. Now, it may be due to over-dulness, but it requires a stretch of the imagination to fancy that in this case the vaccinal virus in the original lymph was of two kinds—one active, producing satisfactory results; the other inert, lying dormant for nine months and then by the aid of a cold or, as in Dr. Washbourn's case, scarlatinal infection developing its latent powers in producing good results. Or shall we put it this way—the more or less inert lymph having exhausted its strength in its first abortive effort, by a further period of rest in the living tissue acquired sufficient vitality when reinforced by scarlet fever to produce true vesicles.

With your permission, Sirs, I should like to ask so great an authority as Dr. Washbourn one or two questions. His patient was vaccinated in four places, "only *one* of which took and that very slightly," yet we are informed further on that Mr. Percy Rose found four spots on the left arm at the usual site of vaccination. Query, were there cicatrices "at the usual sites of vaccination"? Again, and more important, did the four spots, "exactly like mild vaccination at about the seventh day," leave cicatrices behind them like genuine cases of primary vaccination? Is it not generally the case that the concurrence of scarlet fever, whooping-cough, and

measles modifies rather than accentuates the vaccinal process? My own interpretation of the phenomenon was that it was either herpes or due to some other irritant producing dilatation of the capillaries of the cutis causing the superficial layers of the epithelium to be raised from the deeper in the form of a bleb.

I am, Sirs, yours faithfully,

March 24th, 1902. J. MACKENZIE.

## BEEF-WORM IN THE ORBITAL CAVITY.

*To the Editors of* THE LANCET.

SIRS,—In connexion with my article "Beef-worm in the Orbital Cavity," published in THE LANCET of Jan. 4th, 1902, p. 19, I have received the following suggestions from Mr. Ernest Austen who has charge of the collections of diptera in the British Museum. The so-called beef-worm, he thinks, is the larva of a species of dermatobia, probably *Dermatobia cyaniventris*, a dipterous fly belonging to the family œstridæ. I stated that the egg had been laid by the parent fly *beneath* the human skin or mucous membrane, but Mr. Austen suggests—and no doubt rightly—that the egg was laid *upon* the skin and that the larva, on hatching, burrowed beneath the surface in the subcutaneous tissue, which would account quite satisfactorily for the extraordinary position in which it was found. I stated that in the full-grown worm the bristles encircling the middle two-thirds of the body attained a length of half an inch. This statement had never been verified by personal experience, as the longest bristles I have seen on the creature have never exceeded one-twelfth of an inch, but I considered my authority reliable. Mr. Austen, however, informs me that the bristles *never* reach a length of half an inch in *any* dipterous larva.

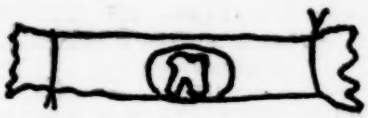
I am, Sirs, yours faithfully,

Corozal, British Honduras, March 4th, 1902. THOMAS GANN.

## INTESTINAL OBSTRUCTION CAUSED BY A TOOTH.

*To the Editors of* THE LANCET.

SIRS,—On Sunday, Feb. 9th, I was called to see a dentist in this neighbourhood and on arrival found him dead. He was taken suddenly ill the night before with colic but I was not sent for till too late. I performed a necropsy and found all the organs normal. However, about midway between the



duodenum and large intestine I found an obstruction in the shape of a hard foreign body. I removed the piece of intestine and on examination found a molar tooth encysted in a membrane which had become attached to the inner wall of the gut thus. It was a natural tooth and had evidently been there for a long period.

I am, Sirs, yours faithfully,

GODFREY WARNES.

Great College-street, N.W., March 23rd, 1902.

## CANCER IN INDIA AND IN CHINA.

*To the Editors of* THE LANCET.

SIRS,—In THE LANCET of to-day (March 22nd) Lieutenant-Colonel Maitland, I.M.S., writes that, "To say, as Mr. Keetley does, that I [i.e., Lieutenant-Colonel Maitland] alone am responsible for all the medical and surgical wants of 30,000,000 Hindoos in Southern India is as absurd as it would be to say that Mr. Keetley was responsible for the whole population of London." This seems to be Lieutenant-Colonel Maitland's idea of a fair description of the following sentence in my letter in THE LANCET of Jan. 18th (p. 193): "Captain Donovan says that Colonel Maitland speaks for the Madras General Hospital where cases from all over the Madras Presidency come for operation." I see nothing absurd in this statement of Captain Donovan.

Every London surgeon who once gets "known" does draw his cases from among the 5,000,000 of Londoners and from far beyond; but his position differs from Lieutenant-Colonel Maitland's in this: that there are 50 other surgeons as well known as himself practising in the same city with the Londoner, while the professor of surgery's position is unique at Madras. Therefore, the fact that the latter "almost always has one or two" Hindoo patients suffering from cancer is no proof of their suffering from it as much as Europeans.

I am greatly obliged to Lieutenant-Colonel George Ranking, I.M.S., for his valuable letter.

I am, Sirs, yours faithfully,

Grosvenor-street, W., March 22nd, 1902. C. B. KEETLEY.

## LOCAL OPTION IN VACCINATION.

*To the Editors of* THE LANCET.

SIRS,—I see that the town council of Hastings on March 21st passed a resolution to request Parliament in this session to abolish the conscientious objector clause and also to make revaccination compulsory. Seeing the difficulty of legislation now would it not be well to allow towns or counties who prefer it, say by a two-thirds majority, to adopt such regulations at once? Surely a short Act to that effect might be got through Parliament. The result of a few years' experience would then be convincing.

I am, Sirs, yours faithfully,

GEORGE HENDERSON, M.D., F.L.S.

Bushey, March 22nd, 1902.

## DIPHTHERIA OF THE CONJUNCTIVA.

*To the Editors of* THE LANCET.

SIRS,—One or two small errors have crept into the report published in THE LANCET of March 22nd, p. 818, of a paper on Diphtheria of the Conjunctiva read before the Ophthalmological Society on March 14th. The report represents me as insisting upon the practical value of an immediate examination of "smears" of the discharge, "stained in methyl-eosine, and the acid reaction of gelatin cultures." What I actually did was to insist upon the value attaching to the staining of cover-glass preparations by Neisser's plan and to the acid reaction of bouillon cultures.

I am, Sirs, yours faithfully,

Welbeck-street, W., March 23rd, 1902. SYDNEY STEPHENSON.

## THE DIPLOMA OF THE SPECTACLE-MAKERS' COMPANY.

*To the Editors of* THE LANCET.

SIRS,—Sir W. Hart Dyke's letter in THE LANCET of March 15th, p. 774, does not meet the case. He says the Company "do not examine in sight-testing." This is evading the question, as the greater part of the examination deals with visual optics and spectacle-fitting, and the Company's official instructor is a gentleman who teaches visual optics only; his printed circulars and advertisements are issued *by the Company* with the particulars and syllabus of the examination, and in one of these circulars he undertakes for a substantial fee to coach for the examination, partly by correspondence and partly by personal tuition at a class held in London during the two weeks immediately preceding the examination. In fact, the worshipful Company provides the examination for a substantial fee and thoughtfully circulates the advertisements of its official instructor who will for another substantial fee endeavour to cram sufficient information into the competitor to enable him to pass, and further thoughtfully provides that if the candidate cannot pass it all at once he may do so by instalments at successive examinations.

I am not raising the question as to whether opticians should or should not test sight but I do say that the intention of the original optical committee is not being carried out, that the present methods are calculated to do serious harm, because, though the examination is no proof of anything beyond the fact that the diploma holder possesses a certain amount of optical knowledge, the diplomas are being used for the purpose of inducing the public to believe that they have been granted for proficiency in knowledge particularly connected with the fitting and adapting of spectacles to correct defective eyesight and are used for advertising purposes to draw trade in the shape of the sale of spectacles. This is shown by the fact that some of the holders attach the letters F.S.M.C. to their names in their

business advertisements, presumably to imply a professional qualification and also advertise themselves as "qualified by examination." Many of these men have scarcely any practical knowledge of the trade at all and do not even profess to understand anything but spectacles.

I may mention that I and eight of my assistants have passed this examination but refrain from making any public use of the fact.

I am, Sirs, yours faithfully,

JAMES AITCHISON,
Citizen and Spectaclemaker; Member of the Original Optical Committee of the Worshipful Company of Spectaclemakers.

Strand, W.C., March 18th, 1902.

## SIR JAMES PAGET'S LECTURES.

*To the Editors of* THE LANCET.

SIRS,—Old students of Sir James Paget and the many who enjoy and profit by his few preserved lectures may be glad to be directed to your first volume for 1869. There they will find three lectures which have never been republished as well as that on the Treatment of Carbuncle which is included in the volume edited by Mr. Howard Marsh. The other lectures were on "Diseased Joints of the Foot," Jan. 30th; "Treatment of Fracture," Feb. 27th; and "Aneurysm of the Femoral Artery," April 7th and 24th. The last is of special interest. As the headings show, they were all reported for THE LANCET at the request of the Editor, being revised by Sir James Paget. To THE LANCET belongs the credit of their preservation. This is a greater service than it might seem because they are perhaps the only hospital lectures of Sir James Paget preserved as delivered. He went through the reports but hardly altered a sentence. The lectures were given without a note and present perfectly his extempore style.

I am, Sirs, yours faithfully,

March 25th, 1902. THE REPORTER OF THE LECTURES.

## NOTES FROM INDIA.

(FROM OUR SPECIAL CORRESPONDENT.)

*Plague Riot in Patiala.—Further Increase of the Epidemic.—Samaritan Funds for Indian Hospitals.—Cholera Inoculations.—Researches in Malaria.*

ON Feb. 19th a somewhat serious disturbance took place in Patiala which is said to have been occasioned by the compulsory segregation of two cases of plague. Major H. Hendley, I.M.S., medical adviser to the State, and Dr. Nathu Mau, the civil surgeon, were attacked by a large mob with sticks and bricks and in consequence of being wounded had to take refuge in the branch dispensary. This was then wrecked and set fire to but the troops arrived in time and the officers were able to effect their escape. The plague camp near the railway-station was also set on fire. According to another account Major Hendley was fastened down by a door, was pelted, and was then carried off and thrust into a mass of filth. He was wounded in nine places—most seriously on the head and on the right leg. These disturbances are not common now but their recurrence serves to show that the dangers to which plague workers are subject are very real.

The plague mortality for the whole of India has again increased. During the past week there have been 14,946 deaths, as against 12,695 for the previous seven days. There were 5922 deaths in the Punjab (an increase of 1809), 4373 in the Bombay Presidency (an increase of 543), 1351 in the North-West Provinces, and 863 in Bengal (an increase of 125). In Bombay city and in Calcutta the disease is growing apace. Bombay had a plague mortality of 701, the general mortality being 1635, equal to a rate of over 105 per mille. Calcutta had 176 plague deaths, an increase of 56, and later figures show a very rapid development. Karachi records 47 deaths, the Madras Presidency 543, Mysore State 507, and Kashmir 317. The old idea that plague is favoured by cold weather is not quite extinct but the continued development with a rising temperature in such places as Bombay and Calcutta ought to correct this fallacy. During the corresponding week of last year there were only 6307 deaths, so that the present serious increase of the disease should be noted.

There are not many hospitals in India which have Samaritan funds, so that the recent gift of Rs. 10,000 by Messrs. Ralli Brothers to the Medical College and Mayo Hospitals in Calcutta is particularly happy. It is intended to be used for clothing and the distribution of small sums for temporary assistance to poor native convalescents—Hindoos, Mahomedans, and Parsees.

Some interesting observations have been made by Major Buchanan and Captain Lamb on the effects of cholera inoculations which may be thus summarised: (1) a preliminary injection of a dead vaccine a few days before the living material is inoculated has the effect of increasing the subsequent constitutional disturbance (the larger the dose of the former the greater the subsequent reaction); (2) a slight increase in the amount of living material greatly increases the constitutional disturbance; and (3) a previous attack of cholera (within one month) decidedly lessens the reaction of a "living" inoculation. The chief inoculations for cholera are now at Goalundo, where the coolies for the tea-gardens pass through, but the returns for cholera are optional on the employers so that the information available is scanty.

Other interesting observations which are shortly to be published refer to researches on malaria fevers by the commissioners. The amount of infection of children is a trustworthy index of the general prevalence of malaria and the "endemic index" is determined by the proportion of children and of anopheles found to be infected. What is true for Africa seems to be true also for India. The endemic index was found to range very widely, from *nil* in Calcutta to 72 in the Duars. In Calcutta not one of the children examined had parasites and not one of the anopheletes dissected was infected. The commissioners, however, recognise malarial disease accompanied by parasites and a form without it. The latter is common in Calcutta, is grave in type, and passes into a true malarial cachexia with a large increase in the mononuclear leucocytes. The actual number of anopheletes present in a district is no criterion of the prevalence of malaria. In the Duars anopheletes are comparatively difficult to capture. All species of anopheletes are evidently not equally dangerous and it is thought that anopheles Rosii, a very prevalent species, is hostile or immune to the parasite. Other observations made are that while in the cold weather zygotes would not develop beyond a certain stage they progressed to sporozoites when the infected mosquitoes were warmed by means of an incubator.

Feb. 28th.

## MAIDSTONE AFTER THE EPIDEMIC.

(BY OUR SPECIAL SANITARY COMMISSIONER.)

*(Concluded from p. 701.)*

*The Diphtheria Epidemic.—The Good Effect of Sewer Ventilating Shafts.—The Sewage Disposal and Drainage Schemes.—Other Measures.—Dangerous Street Hydrants.*

WHEN insisting on the necessity of looking to the sewers and domestic drainage of Maidstone, instead of considering only the water-supply, it was pointed out that typhoid fever was not the only disease that seriously menaced the health of the town. Indeed, except for the great typhoid fever epidemic of 1897, diphtheria was doing more damage. During the six years previous to this epidemic there had been 498 cases of diphtheria notified and only 116 cases of typhoid fever. Then when, in 1897, typhoid fever assumed an epidemic form diphtheria did the same, but the typhoid fever epidemic exhausted itself in a few weeks while the diphtheria epidemic lasted three years. There were 211 cases notified in 1897; this increased to 240 in 1898, to 213 in 1899, and ceased only in 1900, when, however, there were still 50 cases. During these three years there were only 35, 23, and 28 cases of typhoid fever respectively. If we take the 10 years from 1891 to 1900 there were in all 2082 cases of typhoid fever notified, and this includes the great epidemic. But though there has been no such great epidemic of diphtheria it will be found that during these same 10 years no less than 1212 cases of that disease were notified. Consequently, if something is not done to check the prevalence of diphtheria it is possible that in the course of years the cases of diphtheria will exceed in number even those of typhoid fever. This danger is so serious that the Local Government Board held an inquiry on the subject in 1899. It was then shown that the schools had served as a

focus for the spread of the disease and that when the schools were closed by order and disinfected or adjourned for the holidays the prevalence of the disease abated.

Apart from the closing and disinfecting of schools Dr. Charles Pye Oliver, the present medical officer of health, attributes the gratifying reduction in the number of cases of diphtheria notified during the year 1900 to the construction of a number of ventilating shafts in connexion with the main sewers and to the more general and more efficient flushing of the house drains. As a consequence there has been, he states, a marked decrease in the number of complaints received concerning the offensive odours that used to issue from the street manholes. As already mentioned, four ventilating shafts were constructed in 1897. There were three more erected in 1898 and two in 1899. This was altogether insufficient, but there had been so much talk about the contamination of the water as the cause of disease that the authorities did not yet fully realise the absolute necessity of ample ventilation for the sewers. The fact, previously mentioned, that in the two years following upon the typhoid fever epidemic improvements in domestic drainage had been effected in 7776 cases, while this had been done in only 2794 cases during the previous two years, shows that the importance of this phase of sanitation had been appreciated. It was also understood that more sewers and better sewers had to be built, for the length of new pipes laid amounted to 37,714 feet during the two years following upon the epidemic; this contrasts favourably with the 9250 feet laid in the two previous years. But it does not seem to have been fully realised that though the construction and condition of both private drains and public sewers may be improved, still sewer air will force itself upon the population if the sewers are not efficiently ventilated. This danger is greatest at the high levels, and sewers going down a steep incline are apt to become ventilating shafts for the sewers which they join at a lower level. So long as the air can travel upwards it will do so in a straight line and without seeking side issues. But when stopped suddenly at the top end of the sewer the air will then expand and seek an issue at the nearest point. The pressure may be so great that the sewer air can then force its way even through a well-constructed syphon-trap and thus enter the houses that are on the higher levels. This may explain why by far the greater number—indeed, nearly all—the cases of typhoid fever occurred among those who lived 100 feet or more above the main collectors. Now, at last, this fact has been appreciated and during the year 1900 16 new ventilating shafts have been introduced at the termination or summit of the sewers, and thereupon the epidemic of diphtheria ceased. The figures for the year 1901 have not yet been published, but I am told that seven or eight more ventilating shafts were erected last year. Diphtheria still maintained its hold on the town and there were 82 cases notified in 1901; but this gives an annual average of 66·5 cases for the two years following upon the erection of numerous street sewer ventilators as opposed to an annual average of 221·3 cases during the three years preceding this improvement in sewer ventilation. Of course, this incident taken by itself does not suffice to prove that inefficient sewer ventilation was the one cause of the widespread prevalence of diphtheria and of typhoid fever, but doubtless it contributed to render the population more susceptible. There is good reason to believe that diphtheria especially was spread by personal contact at the schools, where, for instance, some children drank by putting their mouths to the same tap instead of using glasses. Nevertheless, it is obvious that means must be taken to prevent people breathing the air that comes from sewers, especially when, as is the case at Maidstone, these sewers are not all self-cleansing.

The question now arises as to what still remains to be done so that Maidstone shall no longer be exposed to the risk of yet another great epidemic. The two most difficult, because they are the most expensive, reforms needed relate to the disposal of its sewage and the reconstruction of its main collecting sewers so that they shall be self-cleansing. The wisest and the cheapest course would be to unite the two questions and to make the one scheme serve both purposes. Unfortunately, the condition of the sewers at present holds quite a secondary position. The inquiries made and the reports published deal mainly with the disposal of the sewage rather than with the sewers themselves. The first report was made by the borough surveyor, Mr. Bunting, and by Mr. W. J. Dibdin and was presented to the town council in October, 1900. This report estimates the flow of sewage at 30 gallons per head, or 1,020,000 gallons per day, and states that the sewage is sometimes of an exceptionally bad quality in consequence of the admixture of refuse from manufactories. In the course of July, 1897, two bacteria beds, a coarse and a fine bed, were constructed for experimental purposes. They had been working satisfactorily for two years. The solid matter held in solution was completely removed. What was oxidisable in the sewage was extracted to the extent of 69 per cent., and the nitrogenous matter, as measured by albuminoid ammonia, to the extent of 75 per cent. The effluents steadily improved in quality when kept either in open or closed bottles; this, it is claimed, proves conclusively that under no circumstances could they injuriously affect the condition of any stream into which they might be discharged. The land actually disposable for the treatment of sewage amounts to nine and a half acres. According to the Local Government Board regulation, for a population such as that of Maidstone there should be at least 20 acres and the greater portion of the nine and a half acres available is unsuitable for the purpose. Therefore a new site must be secured. The first likely site is near at hand, but it could not be reached without pumping the sewage up to a height of 80 feet. The second site proposed would involve the extension of the outfall to a distance of 633 yards, and then what is qualified as very suitable land would be reached below Allington lock. In this case pumping is also necessary, but only to a height of 25 feet. There is, however, a serious objection. The water company has its pumping-station on the north side of the river Medway immediately opposite this area and has sunk a well near its engines. Then there is residential property in the neighbourhood and it is anticipated that the owners would raise objections. Finally, this land is occasionally flooded. A third outfall is suggested at Millhall and New Hythe, where the land would be cheaper, but it would be necessary to obtain a leave of way from the present outfall at Allington Lock and to pump up the sewage 25 feet. The beds might be cheaper, as they could be sunk in the ground and thus would save the cost of sustaining walls. It will be seen that all these schemes are subject to serious objections, and under these circumstances it was only natural to seek further advice. Therefore Mr. James Mansergh was selected to give an expert report on the question and this second report was published in September, 1901. It also presents a confusing variety of schemes, and there is no agreement as to the principle to be adopted. Shall the sewage be purified by land irrigation? shall such irrigation be preceded by bacterial treatment? or will the bacterial treatment alone suffice? Naturally the last proposal would be preferred if the Local Government Board gave its consent. In that case a much smaller site would suffice. The beds, four feet deep, would cover 7·494 acres, with an extra 1·264 acres for storm water, making a total of 8·758 acres. Then, according to the Local Government Board requirements, there ought to be 17 acres more for irrigation with the effluent. If, however, the bacterial treatment was absolutely perfect there would be no need for the 17 acres. Mr. James Mansergh argues that the proximity of tidal waters and the character of the sewage renders Maidstone a typical place for the application of the bacterial method. Otherwise the only really suitable site is at New Hythe or Lansford, and this is the farthest from the town and the most expensive. Here the outfall into the Medway would be considerably below and beyond the Forstal Well and the waterworks.

Without, however, attempting to give any definite opinion as to the respective merits of these different sites I am more concerned in urging the necessity of diverting the greater part of the sewage from the main collectors that follow the course of the river and are not self-cleansing. The schemes mentioned involve the necessity of pumping the sewage up to reach the site selected. Obviously, it would be preferable to construct a main intercepting collector at a higher level which would bring the sewage by gravitation to the site secured. The sewage of the small portion of the town situated below this high-level collector might continue to flow into the existing main collectors; but perhaps the amount of this sewage would be so reduced that pipe sewers placed inside the main collector would suffice to carry it away, and their cleanliness might be more easily maintained. The larger sewer could be used for rain-water only. In other words, the separate system might be adopted for the lower levels, and the amount of the sewage that would have to be pumped up would thus be greatly

reduced and an economy would be effected. The point is to cut in two the long branch sewers which, going down from the highest latitudes to the river bank, act as ventilating shafts to the big collector built at the water side. The high-level intercepting collector, being built on high ground, could be given a sufficient fall to be self-cleansing. Thus the adoption of a new system for the disposal of the sewage should be made to coincide with the introduction of a better system for the drainage of the whole of the town. This would entail a greater outlay, but it is always cheaper in the long run to do what has to be done once for all and thoroughly.

By the side of vast schemes of this description, which are of no productive value, there is a good opening for smaller enterprises at Maidstone, such as the building of a municipal common lodging-house and artisans' cottages which might be made a source of municipal revenue. Also, there are many complaints as to the collection of household refuse and this likewise might be undertaken by the municipality and done more efficaciously. It should be possible in an agricultural centre like Maidstone to sell some portion of the refuse at a remunerative price. Then there are private courts and alleys where the scavenging is very inefficient. As these are not public thoroughfares it is not the business of the municipality to keep them clean and in such places decaying organic matter is apt to accumulate. The owners should see to its removal, but the fact remains that they neglect to do so; and as in such places gratuities are not forthcoming the refuse collectors are also liable to be forgetful. But if the refuse was collected by municipal servants and was a source of municipal revenue such negligence would be less likely to occur. There is yet another point which is a matter of detail but might lead to serious consequences if neglected. The system for closing the street hydrants cannot be qualified otherwise than as dangerous. In the vertical pipe that rises from the main to reach the surface of the street there is an enlargement forming a little chamber big enough to hold a gallon of water. Here is placed a vulcanite ball which is forced up to close the upper aperture by the pressure from the main below. To open the hydrant a key is introduced which presses this ball out of place and then the water surges up into the street. This is all very well so long as the main is full and the pressure is strong enough to hold up the ball in its place. But the effecting of repairs, or intermittent supply during dry seasons, or other causes may reduce this pressure, and then the ball falls from its position. Dirt and water from the street can then enter the space where the ball is kept and thence can reach the main to mix with the water which the inhabitants drink. There are 279 such hydrants in Maidstone, and it is not to be expected that in all cases they should invariably remain in proper working order. This system was adopted some 40 years ago. It was then considered ingenious, but now it is quite obsolete and a safer apparatus should be employed. The medical officer of health in his last report describes a specimen of water which contained nematodes four inches long. He suggests that in its embryo stage the nematode burrows into certain insect larvæ which are swallowed by water-beetles and other aquatic insects. Here it becomes encysted and is discharged by the beetle into the water, where it develops into young and perfect nematodes. The pathogenic germ might, with equal facility, reach the water-supply through these defective hydrants. Seeing how much work has now been accomplished to improve the general sanitary condition of Maidstone it is not too much to hope that the remaining sanitary defects will soon be swept away. In this manner will the great typhoid fever epidemic have proved itself a blessing in disguise.

## MANCHESTER.

(FROM OUR OWN CORRESPONDENT.)

*Jubilee of Owens College, Manchester.*

THE Prince and Princess of Wales visited Manchester on March 12th in connexion with the jubilee of Owens College and the opening of Whitworth Hall, the latest addition to the collegiate buildings. They arrived at the Victoria station at 10.50 A.M., accompanied by their host and hostess, the Earl and Countess of Derby, and were met at the station by the Lord Mayor and other officers of the corporation of Manchester. They then proceeded to the college, where the Duke of Devonshire, the President of the college, and Principal Alfred Hopkinson received their Royal Highnesses. After a reception by the governors and senate in the Christie Library, a procession was formed which included the teaching staff and lecturers. Several distinguished Members of Parliament, notable professors, and eminent ecclesiastics were present, including Earl Spencer, Chancellor of the Victoria University. Thus escorted into the hall the Prince and Princess took their seats on the right of the Duke of Devonshire, the audience rising and singing "God Save the King." The Duke of Devonshire thanked the Prince and Princess for their presence at the celebrations and said that the idea of the founder was to provide in that great centre a university to supply higher education in such branches of learning and science as were usually taught in English universities. It was laid down as a fundamental and immutable rule that the governors, teachers, and students should be subject to no religious tests. The address of welcome from the college authorities was then read by the Principal. Afterwards Alderman Thompson presented to His Royal Highness on behalf of the council a gold key of the hall. The Prince expressed the pleasure of himself and the Princess at being there that day to join in the celebrations and to open the beautiful hall. He regretted the absence of the architect (Mr. Alfred Waterhouse) and of Dr. A. W. Ward and Sir Henry Roscoe through illness. He said also that a college which after five years of its existence was reduced to 33 students and yet could persevere in the path which had been originally marked out, and which could now boast of 32 professors and over 1000 students, had indeed earned a just right to celebrate with pride and satisfaction its first jubilee. He also made sympathetic reference to the names of Owens, Beyer, Christie, Whitworth, and other benefactors of the college, and paid compliments to the great teachers and students who had by their genius and force of intellect maintained in the college a high standard of learning, and added that the presence there that day of the governing body and the representatives of the municipalities of Manchester and the neighbouring towns should serve to strengthen the mutual sympathy and guide the college in its work. He called attention to the special effort recently made to raise a fund to pay the amount of the indebtedness of the college, which was very considerable, and to provide against an annual deficit, and said that the fund had now reached £100,000, which, however, was only enough to carry on the extended work of the college without making additions to the staff and appliances which it was desirable should be made. He was sure that Manchester men would not allow this institution in any way to suffer from want of funds. He then declared the Whitworth Hall open. The meeting was addressed by Sir R. C. Jebb who took the place of Dr. Ward as "representative of literature" and by Professor Rücker as "representative of science." Thanks for their addresses were voted on the motion of Sir F. Adam. The Prince subsequently at the town hall received an address of welcome from the corporation of Manchester and made a suitable reply; he said that had it been practicable to include in that day's proceedings the opening of the new school of technology he would gladly have taken part in that ceremony. The Prince and Princess, with about 300 other guests, were entertained to luncheon in the principal room of the hall. The Prince referred to the recent tour of the Princess and himself and also said that he was sure that they were all happy to see present amongst them so many distinguished representatives of foreign and colonial universities, who had come to take part in the proceedings. On the way to the Victoria station the Royal procession halted at the west porch of the cathedral for the unveiling of a statue of Queen Victoria, the work and gift of Princess Louise, Duchess of Argyll. The Royal departure for Knowsley took place a few minutes after 4 P.M. Several of the tradespeople who occupy premises along the line of the route of the Royal procession offered to give to the hospitals the money received from letting their windows to sight-seers. The Lord Mayor approved the idea and mentioned that as regards subscriptions Manchester compared unfavourably with other large cities. It is to be hoped that the hospitals will benefit considerably by this generous offer.

*Manchester and Salford Sanitary Association: Jubilee Conference.*

The committee of this association has decided to hold a Conference on Sanitary Reform in commemoration of

the fiftieth anniversary of the formation of the association. This conference will take place in the Town Hall, Manchester, on April 24th and 25th next. On April 24th the Bishop of Manchester, who is the President of the association and of the general conference committee, will deliver an inaugural address. Dr. Arthur Ransome, F.R.S., will then relate the interesting history of the Manchester and Salford Sanitary Association, and Sir James Crichton Browne, F.R.S., will follow with an address on Light and Sanitation. On April 25th Mrs. H. J. Tennant will speak on Women's Work in Sanitary Reform; Dr. Arthur Newsholme of Brighton will discourse on Vital Statistics and their Relation to Sanitary Reform; Mr. T. C. Horsfall, a local authority, will read a paper on the Housing Question; Sir William H. Broadbent will give an address on the Prevention of Tuberculosis; Dr. A. Bostock Hill of Birmingham will deal with the Relationship of Voluntary Effort to Constituted Authority in promoting Sanitary Reform; the Earl of Meath will speak on Physical Training; and Dr. J. Niven of Manchester will deal with the Economics of Health. Amongst others who will preside at meetings are Professor J. Dixon Mann, M.D. (the present chairman of the association), Sir William H. Houldsworth, Bart., M.P., Mrs. Moorhouse, Dr. Henry Simpson (a former chairman of the committee), Alderman Walton Smith, J.P. (chairman of the Sanitary Committee, Manchester), Mr. W. J. Crossley, J.P., C.C., Mr. A. Hopkinson, K.C., (Principal of Owens College), the Mayor of Salford, Sir J. T. Hibbert, K.C.B., and Councillor W. Huddart (chairman of the Salford Health Committee). Many municipalities, urban district councils, and other public bodies have appointed delegates or intimated that they will be otherwise represented. All local institutions having aims in common with the association are represented on the conference committee. The proceedings of the conference will be eventually printed and published.

*Flannelette Test.*

At an inquest held at Southport on March 22nd, on a child who died from burns through its flannelette clothing catching fire, the coroner read a letter from a Manchester manufacturer protesting against the opinions of coroners on flannelette and inclosing a sample for testing. On putting a lighted match to it the sample would have been consumed quickly if the coroner had not blown it out, and he said: "With all due respect to the manufacturer I think it would be better not to continue the test."

March 24th.

## WALES AND WESTERN COUNTIES.

(FROM OUR OWN CORRESPONDENTS.)

*The Notification of Tuberculosis.*

IN some towns where phthisis is notified to the medical officers of health there appears to be a little doubt as to what subsequent action should be taken by the sanitary authority, and at a recent meeting of the South Wales branch of the Association for the Prevention of Tuberculosis the medical officer of health of Cardiff (Dr. E. Walford) suggested that female health visitors might very profitably be employed in this connexion, and it was decided to solicit the coöperation of nursing institutions and of voluntary workers.

*A Medical Slander Action.*

At the Glamorganshire Assizes held at Cardiff on March 17th a medical man practising in Barry was the defendant in an action for slander and was ordered to pay £10 damages. The case arose out of the death of one of the defendant's patients who had been struck some time prior to his death by the plaintiff. The defendant attributed his patient's death to this blow and was said to have remarked to a friend when speaking of the affair, "It is a brutal murder." His own version of the expression used was, "It is a brutal matter." The smallness of the damages awarded makes it apparent that the jury were not very much impressed with the gravity of the slander.

*Cardiff and County Public Health Laboratory.*

The Cardiff and County Public Health Laboratory was established about three years ago by the Glamorganshire County Council, and for the past two years has been under the joint control of the Cardiff Corporation and the county council. The second report of the bacteriologist (Dr. W. G. Savage) reveals the immense value such an institution must be to the sanitary authorities in the county. The water-supplies of Cardiff are now examined monthly and of many parts of the administrative county at fixed intervals. Altogether, 558 samples were examined during 1901. It is noticeable that there were 575 specimens for suspected diphtheria, tubercle, &c., from Cardiff examined bacteriologically and only 395 from the county, although the population of the latter is 600,000 and of Cardiff only 170,000. This disparity can hardly be due to the absence of material in the county, for diphtheria was excessively prevalent during the whole year in the large centres of population such as Merthyr and the Rhondda. In connexion with the laboratory, classes in bacteriology, chemistry, and practical outdoor sanitary work are held and were attended during 1901 by some half-dozen students.

*Depopulation of Rural Districts.*

Most of those who have given the subject any serious consideration are agreed that the cramped and often dilapidated condition of the cottages in rural districts accounts in a great measure for the decrease in the population in those districts. The medical officer of health of the Gower peninsula in South Wales (Mr. H. E. Rawlings) in his annual report states that in his opinion if more cottages with small holdings were established it is practically certain that a large number of those who had emigrated to the towns in search of employment would return to the country to pursue a more healthy and congenial industry.

March 24th.

## SCOTLAND.

(FROM OUR OWN CORRESPONDENTS.)

*The John Usher Institute of Public Health, Edinburgh.—Arrangements for the Examination of Pathological Products for the City.*

THE John Usher Institute of Public Health, which is now almost completed, will probably be opened within the next three months. The chair of public health in Edinburgh University was founded in 1898—the necessary endowment having been provided by a legacy of £5000 from the late Mr. A. L. Bruce, supplemented by over £2000 from Mrs. A. L. Bruce and others, together with £8000 given by Sir John Usher of Norton. The Public Health Department in the new university did not, however, possess adequate laboratory accommodation for the new chair. Sir John Usher then most generously offered to build and to equip an Institute of Public Health, and it is this institute which is now nearing completion. It was at first intended that the building should occupy ground lying between the Music Class-room and the Students' Union but this site had to be abandoned as the supply of light was deficient. A site in Warrender Park-road was then adopted, where the conditions as regards light-supply are all that could be desired. The institute lies on the south side of the road and faces north. It is rectangular in form and covers an area of 133 feet by 48 feet. The exterior of the building is treated simply in classic Renaissance style. On the lintel of the main doorway three shields are to be cut, the centre one representing the Scottish Lion and the lateral shields showing the coat-of-arms of the donor, Sir John Usher, and of the Chancellor of the university, the Right Honourable A. J. Balfour. The coat-of-arms of the university will be carved on the pediment above the entrance. On the west front of the building the following inscription will be carved:—

University of Edinburgh.
The
John Usher Institute of Public Health,
Presented to the University of Edinburgh
by
Sir John Usher of Norton and Wells, Baronet.
May, MDCCCCII.

The ground floor contains entrance-hall, staircase, museum, research room, gas analysis and micro-photographic room, three laboratory workrooms designed for carrying on the bacteriological work in connexion with the public health administration of the city, two subsidiary workrooms, and caretaker's house. The first floor contains a chemical laboratory, balance room, optical room with adjoining dark room, students' reading room, water analysis room, research

room, cloak room, and lecture theatre, with adjoining preparation room. Under the staging of the lecture theatre are store-rooms for apparatus, &c. On the second floor there are a bacteriological laboratory, research room, observation room, disinfection room, two incubation rooms, small lecture room for advanced classes, professor's laboratory, retiring room, and library and assistant's room. In the upper storey are placed the extraction ventilation chambers and on the roof provision has been made for carrying out experiments in the open air. In the basement floor there are a refrigerating room, an incinerating room, a room containing a large centrifugal machine with electric motor, and a room for air and water pressure apparatus. Needless to say, the internal arrangements and fittings of the museum and of the various laboratories are of the most approved and up-to-date description. In giving the Institute to the university Sir John Usher made the request that the University Court should provide accommodation for carrying out scientific work in connexion with the public health administration of the city. The committee of the institute accordingly set apart the three rooms above-mentioned on the ground floor of the institute for that purpose, and since 1898 has been carrying on negotiations with the town council in connexion with the matter. The Public Health Committee of the town council was not in favour of handing over the bacteriological work of the city to the Usher Institute, and a fortnight ago reported to the town council on the subject, recommending that the work should not in the meantime be taken from the laboratory of the Royal College of Physicians of Edinburgh, where it was being done in a perfectly satisfactory manner. The town council, however, refused to adopt this report and accepted the proposals of the committee of the Usher Institute. Put as briefly as possible those proposals are: 1. That the three rooms above-mentioned be entirely set apart for the city's work. 2. That a qualified assistant be appointed who shall attend exclusively to the city's work and that the services of an attendant be available. 3. That the whole work be done under the supervision of the professor of public health who shall alone be responsible to the city for the work. 4. The scope of the work to be as follows: (1) bacteriological examinations required by the medical officer of health in the daily work of dealing with infectious disease; (2) bacteriological examinations required by the sanitary inspector (these would include examinations of water, milk, food-stuffs, and flesh, and would also include examination for anthrax and glanders); and (3) bacteriological examinations of specimens in cases of diphtheria, typhoid fever, and tuberculous disease which may be sent by medical practitioners in the city for diagnostic purposes. 5. That the university agrees to perform the whole work for the outlay incurred. The committee estimates that for the investigation of 1000 specimens the cost will be about £360 per annum, this being founded on the experience of cities where a similar arrangement prevails. Of the three rooms mentioned two will be fitted with laboratories, while the third will be used for clerical work. In this third room the samples for examination will be received, the result of the examination recorded, and the reports of the results sent to the medical officer of health or to the practitioner, as the case may be. It is expected that the institute will be opened in May by the Chancellor of the university, the Right Hon A. J. Balfour, M.P.

*Aberdeen University.*

The Aberdeen University Court met on March 11th. The secretary read a letter from the Baroness de Gurbs, intimating her desire to place a stained-glass window in King's College Chapel as a memorial of her late husband, Stephen Baron de Gurbs, a former student of Aberdeen University. It was agreed that the offer should be accepted.—It was agreed to appoint Mr. Charles Murray, M.A., M.B. Aberd., to the post of university assistant in physiology, vacant through a resignation.

March 24th.

## IRELAND.

(FROM OUR OWN CORRESPONDENTS.)

*Public Health of Dublin.*

THE fortnightly meeting of the Public Health Committee was held in the Municipal Buildings on March 18th, when Sir Charles Cameron reported that the death-rate from all causes in the city for the week ending March 15th was 22·2 per 10,000 persons living. This rate, he observed, was unprecedentedly low for this time of the year, the mean for the last 10 years being 34·1. The zymotic death-rate for the suburbs proved to be unusually high—namely, three per 1000, or six times that of the city.

*Surgeon-Captain Crean, V.C.*

The Royal College of Surgeons in Ireland has decided to confer the honorary Fellowship on Surgeon Captain T. J. Crean, V.C., in recognition of his distinguished services in South Africa. He commenced his medical studies in the College School and obtained the Licence of the College in 1895. Since the institution of the reward for "conspicuous valour in the presence of the enemy" five Irish surgeons have been awarded the Victoria Cross. Of these, one belongs to the University of Dublin, while the other four are Licentiates of the Royal College of Surgeons in Ireland.

*An Isolation Hospital for Kingstown.*

A special meeting of the Kingstown Urban District Council was held on March 21st in the Town Hall, Kingstown, to deal with the question of a proposed isolation hospital for the township. After a lively discussion the matter was practically shelved. Mr. D. Edgar Flinn, the medical inspector of the Local Government Board, who was present, intervened, and addressing the council said that in postponing this question it had incurred a very serious responsibility by taking no steps in reference to the treatment of infectious diseases. He pointed out that the council was the custodian of the public health of the most important watering-place in Ireland, in touch with the other side of the Channel where small-pox was now epidemic. He stated that he was there at the request of the Local Government Board to convey to the council their desire that arrangements should be made for the treatment of infective diseases and to state that a temporary isolation hospital could be erected in a fortnight. Rathmines and Pembroke districts were constructing a temporary isolation hospital and such buildings were being erected all over the three kingdoms. If a case of small-pox occurred where was it to be sent? None of the Dublin institutions would admit the patient. This postponement, he said, might mean a very serious matter for the council and the responsibility was on its shoulders and not on those of the Local Government Board. At the conclusion of the meeting it was arranged that Mr. Flinn should attend the proposed meeting of the Sanitary Committee of the council.

March 24th.

## PARIS.

(FROM OUR OWN CORRESPONDENT.)

*The Plague.*

I HAVE on previous occasions[1] given your readers information about sundry cases of plague which occurred last year on board the *Sénégal* and about the complaints made concerning the Frioul lazaretto. The Academy of Medicine which was very anxious to find the best means of prophylaxis against the plague appointed a committee of inquiry with a view to the reform of the French sanitary service. Dr. Vallin, the secretary, made a minute investigation of the Frioul lazaretto on behalf of the committee and his report thereon was submitted to the Academy of Medicine at the meeting held on March 11th. Dr. Vallin insists on the reorganisation of the lazaretto at Frioul. There should be a medical director serving immediately under the Minister of the Interior and a sanitary station ought to be erected at the north-east point of the island of Pomègues which should be independent of the lazaretto. Quarantine for passengers should be given up but they should be compelled to be inoculated with anti-plague serum. The report suggests that the Minister of Marine should be asked to make the carriage of anti-plague serum and the instruments necessary for its administration obligatory on all merchant ships which take long voyages. The inspection of ships' medicine chests and dispensaries should be much more strict and such should be passed by the port sanitary authorities. All rats on board a ship coming from an infected port should be destroyed. Facilities should be given to

[1] THE LANCET, July 20th (p. 163), August 17th (p. 493), and Oct. 19th (p. 1087), 1901.

medical men who may be candidates for employment in the maritime sanitary service for study at a port school of medicine so that they could acquire special professional knowledge which should be tested by examination. Finally, medical men in the service of steamship companies should be given an independent position, so that they should no longer, as is the case at present, be in the position of having to make the performance of their duty stand out in opposition to their chances of security of tenure.

*The Inability of Medical Men to Inherit from Patients.*

It is well known that neither medical men nor pharmaceutical chemists in France have any legal right to receive a legacy from their patients or customers. Dr. Delarue brought before the Chamber of Deputies on Feb. 21st a proposed alteration in the law which ran as follows: "The incapacity laid down by Article 909 of the Civil Code is henceforward abrogated as far as concerns physicians, surgeons, and apothecaries." It is extremely improbable that the Chamber will pass this alteration in the law, despite the very serious reasons which exist in favour of such alteration and which were put forward by Dr. Delarue. Very often, he said, the medical man was exposed to the risk of serious illness or even of death and had to be contented with very poor pay, and, in fact, more often than not the only reward he gained by his profession was the consciousness of duty done. His devotion was always being appealed to and such appeal was never unheard. If the medical man were always to demand remuneration for his work it would be impossible to make certain that the hospital service should be carried on or that the regulations of the Assistance Publique should be duly complied with. Official salaries were increasing and also retiring pensions but there was nothing to help an old physician who had devoted perhaps 40 years of his life in the service of his equals. Moreover, the law as it existed at present did the medical men the injustice of apparently suspecting every medical man to be capable of abusing the power which he possessed over his patients for the purpose of getting hold of their money and of making them carry out their last wills and testaments in opposition to their own wishes. Why did not the law inflict the same disabilities on other professional men, such as barristers or solicitors who had just as much influence over their clients as medical men had over their patients. There was no good explanation why medical men should be thus treated. As for apothecaries, they had nothing to do with the treatment of patients, for their only duty was to send in medicine prescribed by the medical man.

*Photo-therapy and the Iron Electric Arc.*

On March 3rd M. A. Broca and M. Chatin laid before the Academy of Sciences the results of their attempt to utilise an iron electric arc in photo-therapy. They have managed to obtain a perfectly steady arc which takes a current of from 10 to 30 ampères. This arc is very rich in actinic rays which are alone of use. Exposure to it for five seconds reduces ordinary silver photographic paper to a deep red-violet colour. Moreover, it gives hardly any heat rays and so the patient can be placed within 10 centimetres of the apparatus, while the need for a cooling jacket is done away with. The simplification of the apparatus allows of much more exact compression of the affected region being employed than has hitherto been the case with other apparatus, and M. Broca and M. Chatin have used the process at the St. Louis Hospital in nine cases of lupus with excellent results. The arc is covered by a metallic sleeve with a hole of three centimetres in diameter opposite the patient, so that the assistants are completely protected. With an iron arc taking from 15 to 18 ampères and an exposure of from 19 to 25 minutes very remarkable cutaneous reactions were produced in all the patients. They appeared from some 24 to 48 hours after the exposure. Phlyctenulæ comparable to those seen after the use of the Finsen and similar apparatus were noticed, but the light rays appeared to exercise a selective influence on the lupus nodules which were profoundly affected, although the periphery of the ulcer and the healthy skin only showed a slight raising of the epidermis. These results would seem to foreshadow a great future for this method which in addition to giving rays of increased actinic power enables photo-therapy to be carried out without the use of the cooling apparatus which, besides being very complicated, absorbs a certain amount of light rays.

*Action against the Director of a Lazaretto.*

A curious case is now before the courts. Last year a ship arrived from Brazil at Bordeaux on board of which was a young woman far advanced in pregnancy whom the medical officer of the lazaretto compelled to disembark as he suspected that she was suffering from yellow fever. Within a few hours she died and was hurriedly buried. The husband hastened to the spot and, having obtained an exhumation order, found not only the body of his wife but also that of an infant lying between her legs. Now he has haled the medical officer before the courts, declaring that his wife was not suffering from yellow fever but only from troubles incidental to pregnancy. He further declares that she was buried alive and that the birth of the child followed spontaneously on the burial. So, then, this case raises a curious point in obstetrics as well as the question of the responsibility of medical officers of lazarettos.

March 24th.

## BERLIN.

(FROM OUR OWN CORRESPONDENT.)

*Bacilli in the Seminal Fluid in Syphilis.*

AT the last meeting of the Berlin Medical Society Dr. Joseph and Dr. Piorkowsky showed specimens of bacilli discovered by them in cases of syphilis. They examined the semen of syphilitic persons, because in many instances a man without manifest symptoms of syphilis has been known to communicate the virus to a healthy woman by way of the placenta, the effect being that she does not exhibit evidence of the disease until she becomes pregnant. They described their procedure as follows. Semen was obtained from 22 men who had contracted syphilis at different periods varying from five weeks to two years previously and was placed in contact with sterilised pieces of placenta, on which as a nutrient medium there was an abundant bacterial growth, containing after 12 hours long bacilli with clubbed ends resembling those of diphtheria. Cultures transferred from the pieces of placenta could be grown upon agar and blood serum, but direct inoculation of the semen upon agar without previous use of placenta gave no result. The colonies growing on agar developed very quickly but soon showed signs of degeneration which could be made to disappear by reinoculation of the cultures on placenta. The bacilli were stained by Gram's method and could be agglutinated by serum. In five cases of syphilis which had lasted for periods varying from three to 10 years the results were negative. The bacilli were not present either in normal semen or in cases of azoöspermia occurring in syphilitic men. Inoculation into animals gave no decided result. A pig after inoculation developed a peculiar exanthem on the genital organs together with a swelling of the lymphatic glands, but as it died six days later from an epizoic malady these symptoms might perhaps have been due to the latter cause. Dr. Joseph was of opinion that the bacilli discovered by him were specific for syphilis but further investigation on a larger scale was necessary. In the ensuing discussion Professor Jürgens of the Pathological Institute said that similar bacilli had already been described by Dr. Von Nissen. He pointed out that in one of the specimens there were no bacilli but there were spores, so that a mixed infection had perhaps occurred. He recommended that cases of congenital syphilis should be included in the observations, because in them it was possible to avoid mixed infections. Dr. Aronson said that chronic diseases were usually of slow development and considering the rapid growth of Dr. Joseph's bacilli it was unlikely that they were the cause of so chronic a disease as syphilis. Dr. Joseph, in his reply, said that as regards the bacterial origin of syphilis he had been careful to speak with all reserve but he thought it right to mention that the bacilli in question had never been found in normal semen.

*Medical Experts in the Law Courts.*

The trial of Professor Dührssen, of which an account appeared in THE LANCET of March 15th, 1902, p. 779, has directed attention to the state of the law relative to medical evidence given before courts of justice. As a general rule the medical officer of health of the district is *ex officio* medical expert in the courts but in some of the larger towns special medical officers have been appointed for this duty. In cases of considerable importance and in appeal cases recourse is had to the provincial board which exists in each province (Provincial Medicinal-Collegium) composed of professors of the university of the province together with Government medical officers and others, and to a central board in Berlin (Wissenschaftliche Deputation für das

Medicinalwesen) composed of professors of Berlin University only. The professional opinions given by the authority last named have a great influence on the decisions of the courts, for the judges believe that no expert is more competent in medical questions than this board and its opinion is very seldom disregarded. Since the Dührssen trial, however, some medical journals have pointed out that although the board is composed of the leading medical men of Berlin its formally expressed opinions nevertheless do not possess the weight and importance with which they are usually credited. When in a given case the opinion of the board is asked by a public prosecutor or by a court of justice the president of the board, as a rule, entrusts the matter to a member who is a specialist in that department. If, for instance, a surgical case is under consideration it is one of the surgeons or if it is a gynæcological case it is the gynæcologist who draws up the report. There is no discussion of the matter by the whole board; when the report is prepared it is signed by the other members but in reality the opinion of the board is only the opinion of one member whose views may sometimes be out of date and who is by no means superior to other specialists who may be called by the other side. Moreover, the opinion of the board or of the member who acts in its name has to be based on written statements, for the patient is very seldom examined with a view to the preparation of the report. It is also quite unusual for members of the boards to attend a court as witnesses or to undergo cross-examination; a member of the provincial board was present at the trial of Professor Dührssen but the central board was not represented at all. Some medical journals now propose that this system should be altered by abolishing the boards and that in cases of considerable importance the opinions of the most competent men in the respective branches of medicine should be asked, as they would be required to appear in court and after being sworn as experts might be cross-examined like other witnesses.

*The Congress of Naturalists and Medical Men.*

The seventy-fourth congress of the German Association of Naturalists and Medical Men will this year be held beyond the borders of the German Empire—namely, in Carlsbad, the famous mineral water resort in the Austrian province of Bohemia. The congress will meet in two principal sections—a medical one with 17 subdivisions and a scientific one with 11 subdivisions. The medical subdivisions are as follows: (1) anatomy, histology, and physiology; (2) general pathology and pathological anatomy; (3) clinical medicine, pharmacology, balneology, and hydrotherapeutics; (4) history of medicine; (5) surgery; (6) obstetrics and diseases of women; (7) diseases of children; (8) nervous and mental diseases; (9) ophthalmology; (10) diseases of the larynx, nose, and ear; (11) dermatology and syphilis; (12) odontology; (13) military medicine; (14) forensic medicine; (15) hygiene; (16) veterinary medicine; and (17) pharmacy. In the medical section the official subject of discussion will be physiological albuminuria and in the scientific section it will be the circulation of nitrogen.

*"Christian Science."*

The fantastic doctrines known by the name of "Christian science," with which the name of Mrs. Eddy is associated, continue to occupy the attention of the public, and it is said that they have made more progress, especially among females, than is generally supposed. Believers abound in Potsdam, where the Emperor's summer residence is situated, and many of the nobility and court officials engage in the exercises prescribed by Mrs. Eddy. The Emperor has expressed strong disapproval of these proceedings, and has caused it to be announced that persons who attend the meetings or in any other way encourage the new system will not be admitted to Court.

March 24th.

THE EXAMINER IN PHYSICS AT EDINBURGH UNIVERSITY.—The Edinburgh University Court, which met on March 17th, appointed Mr. Dawson F. D. Turner, M.D., F.R.C.P. Edin., examiner in Experimental Physics to the University. We believe that this university is the first to have recognised the importance of having an examiner who has received a medical training to examine medical students in physics.

# Obituary.

## WILLIAM TOWLSON KAY, M.R.C.S. ENG., L.R.C.P. EDIN.

THE death is announced of Mr. W. Towlson Kay, late of Gateshead, which occurred at Eastbourne on March 9th. Mr. Kay was born in 1849 and was a student at the Newcastle-on-Tyne College of Medicine, where he had a distinguished career. After securing his diplomas he was appointed medical tutor to his college for a time when he joined the late Dr. Dixon of Gateshead in partnership. Later he practised on his own account and soon secured a large and good practice. He was appointed surgeon to the Gateshead police, a post which he held for 25 years. Three or four years ago his health began to fail and in October, 1900, he retired from practice and went to live at Eastbourne. For a time his health improved but in the autumn of last year he had a relapse which ended fatally on March 9th. Mr. Kay was a great favourite with his patients owing to his genial manner and assiduous attention to them. He took no part in public life but was a member of the local medical societies. He leaves a widow but no children.

## JOHN BARCLAY, M.D., C.M. ABERD.

DR. BARCLAY of Banff died at his residence there on March 11th, after a lingering illness. He received his medical education at the University of Aberdeen, where he graduated in 1862, and was then appointed assistant professor of materia medica and medical jurisprudence. 30 years ago he commenced practice in Banff and built up one of the largest medical practices in the county of that name. He held many public and official appointments in Banff. Dr. Barclay acted as an examiner at Aberdeen University from 1880 to 1883. His wife, who was a daughter of the late Provost Coutts of Banff, predeceased him several years ago. He leaves two sons and two daughters.

## HUGH FRASER, M.B., C.M. ABERD.

A CABLEGRAM was received in Aberdeen on March 11th stating that Dr. Hugh Fraser had died from enteric fever at Bethulie, South Africa, on March 4th. After graduating at Aberdeen University Dr. Fraser came to England, and some four years ago he proceeded to King Williamstown, Cape Colony, where he was stationed until a few months ago, when he accepted the position of medical officer in the camp at Bethulie. Dr. Fraser was the youngest son of the late Dr. George Innes Fraser of Aberdeen. The deepest sympathy is felt for Dr. Fraser's mother in her sudden and unexpected bereavement.

# Medical News.

SOCIETY OF APOTHECARIES OF LONDON.—In March the following candidates passed in the subjects indicated:—

*Surgery.*—C. R. Bradley (Section I.), St. George's Hospital; S. J. H. M. Eastwick Field, Royal Free Hospital; J. W. Elliott (Section I.), St. Mary's Hospital; H. S. French (Sections I. and II.), Oxford and Guy's Hospital; K. Heanley (Section I.), Royal Free Hospital; E. O. Libbey, Leeds; and S. C. Wilkinson (Sections I. and II.), Leeds.

*Medicine.*—F. G. Bennett (Section II.), University College Hospital; W. T. Colyer, Cambridge; H. S. French (Sections I. and II.), Oxford and Guy's Hospital; R. Gauld (Sections I. and II.), London Hospital; K. Heanley (Section I.), Royal Free Hospital; W. St. A. F. Hubbard (Sections I. and II.), Charing Cross Hospital; O. Millauro (Section I.), Westminster Hospital; H. H. Sloane (Section II.), St. Bartholomew's Hospital; W. P. Taylor, Sheffield and Bristol; J. E. Turle (Section I.), University College Hospital; and A. F. Van Dijk (Sections I. and II.), St. Bartholomew's Hospital.

*Forensic Medicine.*—H. S. French, Oxford and Guy's Hospital; W. St. A. F. Hubbard, Charing Cross Hospital; W. P. Taylor, Sheffield and Bristol; J. E. Turle, University College Hospital; A. F. Van Dijk, St. Bartholomew's Hospital; and J. H. Williams, London Hospital.

*Midwifery.*—D. Cotes-Preedy, Cambridge and St. George's Hospital; G. M. Crockett, Royal Free Hospital; E. F. Forjett, Edinburgh; H. S. French, Oxford and Guy's Hospital; H. M. Jones, Royal Free Hospital; J. A. Kilpatrick, King's College Hospital; M. E. Martin, Royal Free Hospital; H. H. Sloane, St. Bartholomew's Hospital; G. B. S. Soper, Guy's Hospital; and S. Zweiback, Königsberg.

The diploma of the Society was granted to the following candidates, entitling them to practise medicine, surgery, and midwifery: W. T. Colyer, S. J. H. M. Eastwick Field, H. S. French, E. O. Libbey, S. C. Wilkinson, and J. H. Williams.

THE Dawlish and Teignmouth District Councils have decided to erect a joint isolation hospital.

LARYNGOLOGICAL SOCIETY OF LONDON.—The ordinary meeting of this society has been postponed to Friday, April 11th, at 5 P.M.

VACCINATION GRANT.—Mr. David T. Key, M.R.C.S. Eng., L.S.A., public vaccinator for Wyke Regis, has received for the first time the Government grant for successful vaccination.

AT a public meeting at Peterborough last week it was decided to commemorate the Coronation of King Edward VII. by raising by voluntary subscription a sufficient sum to add a new wing to the hospital presented to the city by the late Earl Fitzwilliam.

KING EDWARD'S HOSPITAL FUND FOR LONDON.—The Organising Committee of King Edward's Hospital Fund for London, 81, Cheapside, E.C., has signified that it has much pleasure in accepting an offer which has been made to it with regard to Mr. Percy Godfrey's "Coronation March." This proposal is to the effect that 6*d.* derived from the sale of each copy of the march shall be devoted to the "coronation gift" and that all sums derived from licences to perform the march and collections made at concerts shall be given to the same object. Mr. Godfrey's composition gained the prize recently offered by the Worshipful Company of Musicians for the best coronation march, the adjudicators being Sir Frederick Bridge, Sir Walter Parratt, and Sir Hubert Parry.

THE ROYAL INSTITUTION.—In a lecture on Some Electrical Developments delivered at the Royal Institution on March 22nd Lord Rayleigh said that although the Roentgen rays were so easily produced and were capable of giving such remarkable effects, their essential nature was in several respects unknown. They travelled in straight lines and could neither be refracted nor reflected, from which it necessarily followed that they could not be polarised. Diffraction experiments made with great care by Dutch investigators had led to no result beyond proving that if the rays had an undulatory character their wave length could not exceed the one-hundredth of that of light. As was well known, they produced photographic effects by the decomposition of silver salts and rendered certain fluorescent substances luminous; the only other respect in which they were found to resemble ordinary light was that both the Roentgen rays and the ultra-violet rays of the luminous spectrum caused electric leakage of gases. At one time it was supposed that the Roentgen rays admitted of partial reflection but it was now considered that the apparent effect was probably due to some secondary emission. There were many points of resemblance between Becquerel rays and Roentgen rays. Becquerel formerly believed that the rays discovered by him could be polarised but this view was now abandoned. Roentgen rays could be deflected by magnets and experiments were shown in which the rays passing through a hole in an aluminium plate and falling on a fluorescent screen were by means of magnets displaced both in straight lines and in curved lines. Changes produced in jets of steam and water by electrification were also shown. In another experiment common air was blown through a Woulfe's bottle containing sulphuric acid which did not cover the end of the inlet tube, so that the air did not bubble through the acid but merely passed over its surface. A jet of steam cast only a faint shadow on a screen when a beam of electric light was turned on it, but when the air from the Woulfe's bottle was directed against the jet of steam the shadow became much darker. When nitric acid was substituted for the sulphuric acid the effect did not take place. Lord Rayleigh said that the cause of this phenomenon was quite unknown and he recommended it to the notice of young experimenters because of the simplicity of the apparatus required.

NOTIFICATION OF CHICKEN POX.—The Bath Rural District Council on March 12th decided to include chicken-pox in the list of notifiable diseases.

BRIDGWATER INFIRMARY.—On March 20th Colonel W. Barratt, the president of the Bridgwater Infirmary, formally opened the new operation room which has been provided by means of a bequest of £300 left for that purpose by the late Mr. George England.

ROYAL HOSPITAL FOR INCURABLES, DUBLIN.—A meeting of the board of governors of this hospital was held on March 18th, when six new patients were elected. The hospital is entirely unsectarian and provides accommodation for 212 patients, including separate wards for the treatment of 72 patients suffering from cancer and consumption, in addition to 140 inmates afflicted with various other incurable maladies, all of whom are disqualified for admission into the general hospitals. The average daily number of beds occupied throughout last year was 203 and further financial assistance is urgently needed to reduce a debt of £974.

BIRMINGHAM AND MIDLAND HOSPITAL FOR WOMEN.—During the past year 3285 new out-patients have attended at this hospital, showing a decrease of 38 as compared with last year's figures. The total number of new and old cases treated during the year was 17,174, being 570 less than last year. 440 patients were admitted to the in-patient department, an increase of 13 on last year and the total number of operations was 422, an increase of 12. The number of operations involving abdominal section was 213—that is, nine more than last year; of these nine patients have died, giving a death-rate of 4·2 per cent. This compares with 2·94 per cent. on 204 operations in 1900.

DOWN DISTRICT LUNATIC ASYLUM.—On March 15th at a meeting of the committee of management of the Down District Lunatic Asylum the following motion with reference to the necessity for the establishment of a central laboratory in Ireland for the investigation of the pathology of insanity was unanimously carried: "That we, the committee of management of Down District Asylum, desire to express our warm approval of the proposed central laboratory for research in the pathology of insanity; we hereby state our readiness to affiliate this institution with such an undertaking when it assumes a practical shape and to contribute towards its maintenance a sum of £25 per annum. We are of opinion that the project is deserving of general support, believing, as we do, that the prevention and the most effective treatment of mental disease must be largely aided by an accurate knowledge of the morbid physical conditions associated with it, and feeling that any step that tends to promote such knowledge must ultimately prove an important factor in the reduction of the burden of the lunacy charges of the country."

DONATIONS AND BEQUESTS TO HOSPITALS.—The Lord Mayor and Lady Mayoress of London have contributed 20 guineas to the Royal Hospital for Diseases of the Chest, City-road, London, towards the fund now being raised to build and to furnish a home for the nursing staff.—The committee of the Hospital for Consumption, Brompton, has received £1000 from the Goldsmiths' Company and £105 from the Mercers' Company for the country branch of the hospital at Bagshot where the open-air treatment of phthisis is to be carried out.—By the will of Miss Frances Hester Robinson of Richmond £2000 are bequeathed to the British Home for Incurables at Streatham, £2000 to the Deaf and Dumb Asylum in the Old Kent-road, £2000 to the School for the Indigent Blind (for the Junior Branch at Wandsworth), £2000 to the Society for Granting Annuities to the Poor Adult Blind, £1000 to the Charing-cross Hospital, and £1000 to the Hospital for Consumption and Diseases of the Chest, Fulham-road.—Under the will of the late Miss Olivia Atherton of Everton the Royal Infirmary (Liverpool), Northern Hospital (Liverpool), Southern Hospital (Liverpool), and Liverpool Country Hospital for Chronic Diseases receive £1000 each; the Hospital for Women (Liverpool), the Eye and Ear Infirmary (Liverpool), the Liverpool Dispensaries, Liverpool Children's Infirmary, Bootle Hospital, and Stanley Hospital receive £500 each; the Children's Convalescent Home at West Kirby, Wirral Children's Hospital, Home for Incurables, Cancer Hospital (Liverpool), and Liverpool Hospital for Consumption receive £250 each; and the Wallasey Cottage Hospital (Liverpool) receives £200.

HEALTH OF TIVERTON RURAL DISTICT.—Mr. J. R. R Pollock, the medical officer of health, reports that during 1901 the birth-rate in this Devonshire rural district was 25·51 per 1000, and the death-rate was 14·81 per 1000.

DEFECTIVE DRAINS.—At the Bristol County Court on March 18th a tenant claimed from the owner of a house £50 damages for alleged breach of warranty respecting the drains. The plaintiff stated that when he took the house from the defendant he was assured that the drains were in perfect condition. After a few months members of the family were constantly ill and one child died from diphtheria. Eventually the plaintiff communicated with the sanitary authority and the drains were found to be defective. The defendant stated that he gave no warranty; all he said was that to the best of his belief the drains were all right. Judgment was given for the plaintiff for £25, with costs.

CHELTENHAM GENERAL HOSPITAL.—The annual meeting of the subscribers to this institution was held on March 18th under the presidency of Colonel Croker-King. The medical report stated that 896 in-patients had been admitted during 1901, against 871 in 1900, and there had been 8867 out-patients treated compared with 7936 in the preceding year. The financial statement showed that there was a small increase in church collections and Hospital Saturday collections and the legacies received amounted to £2250, but the excess of expenditure over income nevertheless amounted to £2419. Colonel Croker-King was re-elected president.

TORBAY HOSPITAL, TORQUAY.—There is some difficulty at Torbay Hospital with respect to a rule which was adopted by the committee last year providing for the annual election of the honorary medical staff. At the recent election two of the physicians, who were originally appointed for life, were not re-elected although they were thanked for their past services. The board of management then advertised for two gentlemen to fill the vacancies. The members of the profession in Torquay at a meeting agreed that none of their number should apply for the appointments and consequently no applications were received. The honorary medical staff of the hospital feel strongly on the subject of the rule alluded to and six influential governors have requisitioned a special meeting with the object of getting the rule altered.

WINSLEY SANATORIUM.—A public meeting in aid of the proposed sanatorium for consumptives for Somerset, Wilts, Gloucestershire, and Bristol was held at Bath on March 13th under the presidency of the Mayor (Mr. E. E. Phillips, L.R.C.P. Edin., M.R.C.S. Eng.). Dr. L. Weatherly mentioned that the members of His Majesty's Advisory Board who recently visited the Winsley Sanatorium, although they regarded it as an admirable spot for such an institution, found that the space would be too small for the erection of the King's Sanatorium for which Sir E Cassell had given £200,000. It was stated that £20,000 would be needed for the erection of the proposed sanatorium; £5000 had only been received at present, and it has been resolved that the foundation-stone shall not be laid until one half of the required sum has been raised.

BIRMINGHAM GENERAL HOSPITAL.—The report of this institution for 1901 states that the old hospital which was sold to the corporation has now been pulled down and a building which for 130 years did so much for the relief of the sick and suffering passes away in all but memory. The demand on the beds, though great in previous years, has been even greater during the past year, the list of cases awaiting admission often exceeding 200 and it has rarely dropped to 100. The number of in-patients was 5170, a decrease of 41 as compared with the previous year. The daily average of patients in the hospital was 278, against 281½ in 1900. Of the in-patients admitted 902 were children under 12 years of age, of whom 138 were under the age of two years. The out-patients numbered 62,643, or 1778 more than in the previous year. The amount accruing from subscriptions, &c., was £7747 17*s.* 8*d.*, or £469 3*s.* 8*d.* more than in the previous year. Donations amounted to £582 0*s.* 5*d* and special congregational collections to £52 0*s.* 5*d.* £2973 6*s.* 8*d.* were placed to the credit of the current account as the moiety of legacies received during the year. The ordinary expenditure was £24,411 9*s.* 11*d.* and the extraordinary expenses amounted to £812 17*s.* 2*d.*, while the sum of £276 8*s.* 5*d.* was transferred to the Jaffray branch account to meet the deficit at that institution. An adverse balance of £5110 19*s.* 1*d.* remained at the end of the year, the surplus of £1180 5*s.* 10*d.* shown on the year's working being applied to the reduction of the deficit of £6291 4*s.* 11*d.* brought over from last year.

HEALTH OF LAUNCESTON.—Dr. C. G. Gibson, the medical officer of health of Launceston (Cornwall), in his annual report for 1901 states that during the year the births numbered 59 and the deaths 48. The birth-rate was 14·5 per 1000 and the death-rate was 11·84 per 1000. Dr. Gibson urged the town council to provide an isolation hospital for small-pox cases.

DORSET COUNTY HOSPITAL, DORCHESTER.—The sixty-first annual report of this institution which has just been issued states that 299 in-patients were admitted during 1901, against 311 in 1900. The out-patients numbered 961 compared with 996 in the previous year. The average daily number of in-patients was 33; the average cost per patient weekly amounted to £1 0*s.* 2*d.* The financial statement shows that the receipts for the year amounted to £2165 and the expenditure to £2284. The deficit balance at the end of 1900 amounted to £18 and this has now been increased to £137. During the present year it is hoped to provide the hospital with a new operation room, and owing to munificent donations from the Earl of Eldon and the Earl of Ilchester the committee hope that the work will be completed without any call being made on the general funds of the institution.

# Parliamentary Intelligence.

## NOTES ON CURRENT TOPICS.

*Midwives Bill.*

IN anticipation of the report stage of the Midwives Bill several amendments have been prepared and put down on the notice paper of the House of Commons. Mr. Griffith-Boscawen and Mr. Robert Ambrose propose to raise once more the question of the scope of the legislation by moving amendments to make it apply to all women who habitually and for gain attend midwifery cases, while Mr. George Harwood has put down a notice to strike out the subsection inserted at the instance of Sir John Batty Tuke in the Grand Committee which proposes that no woman shall be entitled to recover fees in the courts unless she is certified under the Act. In Clause 2 Mr. T. P. O'Connor will move to strike out the words which give special recognition to the certificates in midwifery of the Royal College of Physicians of Ireland and the Obstetrical Society of London. Several amendments appear in the notice paper with reference to Clause 3, the clause dealing with the constitution and duties of the Central Midwives Board. Mr. Patrick White proposes that the General Medical Council and not the Lord President of the Privy Council shall take the steps for the formation of the Board; Mr. McGovern that the four registered medical practitioners shall be appointed by the General Medical Council instead of by the Royal College of Physicians of London, the Royal College of Surgeons of England, the Society of Apothecaries, and the Incorporated Midwives Institute; and Mr. Griffith-Boscawen that the Royal British Nurses Association shall have a nominee on the Board. With this substantial body of amendments on the notice paper the Bill cannot be taken as unopposed business after midnight. In all probability, therefore, it will have to wait its turn with other private Members' Bills for consideration on a Wednesday after Whitsuntide, unless, of course, the Government arranges to give special facilities.

## HOUSE OF COMMONS.

TUESDAY, MARCH 18TH.

*Vaccination in Government Departments.*

MR. CHANNING asked the Vice-President of the Committee of Council on Education whether he was aware that on Feb. 19th a general order was issued on behalf of the Board of Education and signed by Sir William Abney inviting the officers of the department at South Kensington to submit themselves for vaccination and revaccination by the public vaccinator on Feb. 25th and 26th, and desiring those who did not wish to do so to send in their names to the heads of their sections; whether there had been issued since then a further minute, signed by Sir William Abney, inviting officers who still remained unwilling to reconsider the matter before the Board proceeded to decide what further steps should be taken; whether any similar action had been taken on the elementary side at Whitehall and in other Government departments; whether the order and minute were issued by Sir William Abney with the sanction of the Lord President and Sir George Kekewich; and, if so, under what powers, statutory or by regulation, any further steps to compel the officers to be vaccinated or revaccinated could be taken.—MR. GRANT LAWSON, replying for SIR JOHN GORST, said: Notices relating to the vaccination of persons in the employ of the Board of Education have by the authority of the Board been issued both at Whitehall and South Kensington. Similar notices have, I am informed, been issued by other Government departments. No person can be compelled by the Board of Education to be vaccinated or revaccinated.

*The Water-supply at Darenth.*

Dr. FARQUHARSON asked the President of the Local Government Board (1) whether he was aware that the Kent Waterworks Company had nearly completed a large pumping station in the parish of Darenth in the Darenth valley, within 1100 yards of the inclosure at Gore Farm in which the Metropolitan Asylums Board had also nearly completed small-pox hospitals to hold a total of 2500 cases; and that the pumping station was at a lower level than any part of this inclosure; and (2) seeing that these small-pox hospitals and the other establishments belonging to the Metropolitan Asylums Board at Gore Farm had no means of drainage for liquids other than soakage into the porous gravels and sands overlying the chalk strata from which the Kent Waterworks derive their supply, whether he would institute an inquiry into the effect on the quality of the water-supply from this drainage, including that from the burial-ground belonging to the Metropolitan Asylums Board at Gore Farm, in which between 1500 and 1600 interments of small-pox and scarlet fever patients had been made, this burial-ground being situated 160 feet higher than, and 1700 yards distant from, the Kent Waterworks Company's pumping station.—Mr. GRANT LAWSON replied for Mr. LONG, saying: I am aware of the facts mentioned in the first paragraph of the question. The well was approved by me in December last as a source of supply after an investigation by an inspector and after samples of the water had been examined by experts and found to be of great organic purity. I am informed that there is no danger of the well being polluted by surface drainage as it is lined with closely fitting iron cylinders to a depth of 92 feet from the surface, the lower 60 feet being in the solid chalk. Moreover, I understand that Gore Farm drains into a subsidiary valley of the Darenth, which enters the main valley fully half a mile below the site of the well, and it is therefore impossible for surface drainage from the hospital lands to reach the vicinity of the well.—Dr. FARQUHARSON asked whether the Local Government Board would send down an inspector in order to relieve the local anxiety on this subject.—Mr. GRANT LAWSON: An inspector was there as recently as last November. He made a close inspection and, as I have said, the water was then submitted to analysis, I do not think it is necessary to do it again.

THURSDAY, MARCH 20TH.

*Vaccination Questions.*

Mr. ROUND asked the President of the Local Government Board if his attention had been called to the danger of infection in schools from children who had not been vaccinated; and if he would take steps, if necessary by legislation, to empower school authorities to exclude such children from attendance at school.—Mr. LONG replied: I am aware of the danger referred to where small-pox is prevalent but it mainly affects children who are not protected by vaccination. I may, however, point out that under Article 88 of the Code of Regulations made by the Board of Education, the managers of any public elementary school must comply with a notice of the sanitary authority of the district or of two members acting on the advice of the medical officer of health, requiring them for a specified time with a view to preventing the spread of disease to exclude any scholars from attendance. There is a right of appeal to the Board of Education if the notice is considered unreasonable. I understand that in one case unvaccinated children have been excluded under the article.

Mr. CORBIE GRANT asked the President of the Local Government Board whether he was aware that Dr. S. M. Copeman inoculated monkeys with small-pox material obtained from cases under observation during outbreaks of the disease, that he inoculated calves from the vesicles so produced on the monkeys, and inoculated a considerable number of children from the vesicles so produced on the calves, as described by himself in a paper read before the Royal Medical and Chirurgical Society on Dec. 10th, 1901; whether these experiments were conducted with the knowledge of the parents or with the knowledge or sanction or at the expense of his department; and whether Dr. Copeman was now or had been in the employment of the Government.—Mr. LONG, in reply, said: The answer to the first two points is in the affirmative. I am informed that a considerable number of children were vaccinated with the lymph obtained from the calves referred to but none of the vaccinations were performed by Dr. Copeman. I have no information as to whether the experiments were conducted with the knowledge of the parents of the children vaccinated but they were not performed with the knowledge or sanction or at the expense of the Local Government Board. Dr. Copeman is one of the medical inspectors of the department.

FRIDAY, MARCH 21ST.

*Enteric Fever among the Troops in South Africa.*

Sir WALTER FOSTER asked the Secretary of State for War if he could state the names of the special sanitary officers who had been sent to South Africa to inquire into the origin and spread of enteric fever and other preventable diseases among the troops, with the dates of their appointments, the length of time spent in South Africa on these duties, and the duties on which they were now engaged.—Mr. BRODRICK replied: Three gentlemen were specially employed in August, 1900, to inquire into the subjects mentioned—Dr. Simpson, Colonel J. L. Notter, R.A.M.C., and Major Bruce. Dr. Simpson served until November, 1901, with an interval of five months, when he was employed on plague duties. He has now gone to Hong-Kong to investigate the recurrence of plague there. Colonel Notter served till October, 1901, when he returned to England. He is now acting as principal medical officer at Aldershot. Major Bruce served till October, 1901. He is now serving on the Advisory Board for Medical Services. Captain Beveridge and Colonel Cooper, R.A.M.C., who were already in South Africa, were also employed in the same work. The recommendations of these gentlemen are being carefully carried out by the responsible medical officers on the spot.

While the House was in Committee of Supply discussing the vote for the salaries and expenses of the War Office Sir WALTER FOSTER made a speech on this subject. He argued that the wastage among the troops from enteric fever was not taken sufficiently seriously. During the months of January and February of the present year there had been 800 deaths among the soldiers—a mortality heavy in itself and representing a large amount of disability through sickness. This drain on the forces, he submitted, was not creditable to the administration. He had been told by the Secretary of State that he was advised by civilian medical men in the best practice in London, but what he stood in need of were the guidance and advice of special experts in sanitary matters—leading medical officers of health or experienced inspectors under the Local Government Board. There were no fewer than 60 places where the mortality from enteric fever was excessive. The disease was preventable and he thought special pains should be taken to protect the soldiers from it. He would like to know whether anything was being done in the way of providing the columns with the means of boiling water.—Mr. BRODRICK said that he agreed with the hon. Member as to the seriousness of the wastage from this disease, but he would remind him of the difficulty there was in enforcing any regulations or precautions that might be prescribed. Regulations might be enforced in a civil community, but the case was entirely different with a moving army scattered over so wide a region as South Africa. Soldiers tired and thirsty would drink water whenever they came across it. A column arrived at a place and while food was being prepared the men in defiance of regulations made off to the river and drank the water. In this way the very best precautions were rendered of no avail. At the same time he fully appreciated the force of the hon. Member's speech and he assured him that the matter would have his best efforts and attention.

*Medical Staff of the Refugee Camps.*

Mr. LAMBERT asked the Secretary of State for the Colonies whether any of the medical staff of the refugee camps had complained of their treatment by the chief superintendent, and whether the same had been dismissed by him without notice or reason assigned.—Mr. CHAMBERLAIN said: No, sir; I have not received any complaints, but I think that I ought to add that I have absolute confidence in Sir William Maxwell, the superintendent of the concentration camps and the military governor of the district, and that I should not think of interfering with his discretion in dealing with his subordinates.

TUESDAY, MARCH 25TH.

*Colonel's Pay in the Royal Army Medical Corps.*

Captain NORTON asked the Secretary of State for War if he could state the total pay and allowances of a colonel on the general staff, a colonel on the staff of the Royal Engineers, and a colonel of the Royal Army Medical Corps respectively, and whether any increase of total emoluments for the last-mentioned officer had been arranged for in the forthcoming warrant for the Royal Army Medical Corps.—Lord STANLEY replied for Mr. BRODRICK: The pay and allowances are as follows: Colonel on the staff, £880 and forage; Colonel of the staff (R.E.), £1063 and forage; Colonel of the R.A.M.C., £880 and forage. The recent Committee on the Reorganisation of the Army Medical Service did not recommend any increase to the emoluments of colonels of the Royal Army Medical Corps and no increase is therefore provided for officers of this rank in the forthcoming warrant.

*Small-pox Statistic.*

Mr. CORBIE GRANT asked the President of the Local Government Board, having regard to the fact that the system of classification of small-pox deaths, according to a footnote in the weekly return of the Registrar-General, excluded from the classes of vaccinated and not vaccinated all cases not so certified by registered medical men and that cases were put under the heading "no statement" not only when the medical practitioner was unable to certify whether there had been vaccination or not but when the practitioner had failed to make any mention of vaccination, whether he would direct the Registrar-General to secure a stricter classification of the small-pox deaths.—Mr. GRANT LAWSON, for Mr. LONG, replied: I have communicated with the Registrar-General who states that he does at present secure a classification of small-pox deaths which is sufficiently accurate for statistical purposes. Frequently it is not practicable to obtain full information concerning particular cases in time for publication in the current weekly returns but from time to time the information is supplemented with the help of facts subsequently obtained. The Registrar-General will, however, consider whether any alteration shall be made as regards the publication of vaccination statistics in connexion with deaths from small-pox.

*Bubonic Plague in Hong-Kong.*

Mr. WEIR asked the Secretary of State for the Colonies if he would state the percentage of the bubonic plague cases in Hong-Kong for each month since August last inclusive; and, in view of the fact that the plague was largely attributed by the Legislative Council of Hong-Kong to the prevalence of rats, would he say whether effect had been given to the council's proposals to employ an English rat-catcher; and, if so, with what result.—Mr. CHAMBERLAIN replied: The number of plague cases in Hong-Kong was—for August, 20; for September, 22; for October 3; and one case occurred in each of the three months, December, January, and February. I have urged upon the Colonial Government the necessity of destroying rats and very large numbers have been killed, but no such proposal as that referred to by the hon. Member has been brought to my notice.

*Typhoid Fever Epidemic in Ireland.*

Mr. TULLY asked the Chief Secretary to the Lord Lieutenant of Ireland if he could say what was the nature of the report of Dr. McWeeney as to the outbreak of typhoid fever in Boyle Union in connexion with a local creamery; and could he state why no steps were taken to act on this report and to close the creamery during the epidemic.—Mr. WYNDHAM said in reply: The report was unfavourable. The creamery was closed for some days, during which the structural defects were remedied. The Local Government Board inspector considers the creamery may now be worked without danger to the public health.

## BOOKS, ETC., RECEIVED.

BAILLIÈRE, J. B., ET FILS, 19, Rue Hautefeuille, Paris.

Les Oxydations de l'Organisme (Oxydases). Par E. Enriquez, Médecin des Hôpitaux de Paris, et J. A. Sicard, Chef de Clinique à la Faculté de Médecine de Paris. ("Actualités Médicales" Series.) Price 1 fr. 50c.

HIRSCHFELD BROTHERS, 13, Furnival-street, Holborn, E.C.

Plant Relations: a First Book of Botany. Plant Structures a Second Book of Botany. By John M. Coulter, A.M., Ph.D., Head Professor of Botany, University of Chicago. Second edition, revised. Price 6s. net.

KIMPTON, HENRY, 15, Furnival-street, Holborn, E.C.

The Principles of Pathological Histology. By Harvey R. Gaylord, M.D., of Buffalo, N.Y., and Ludwig Aschoff, M.D., of Göttingen. With an Introductory Note by William H. Welch, M.D., of Baltimore, Md. Price 31s. 6d. net.

The Ready Reference Handbook of Diseases of the Skin. By George Thomas Jackson, M.D. (Col.), Chief of Clinic and Instructor in Dermatology, College of Physicians and Surgeons, New York. Fourth edition, thoroughly revised. Price 12s. 6d. net.

A Treatise on Pharmacy for Students and Pharmacists. By Charles Caspari, Jr.Ph.G., Professor of the Theory and Practice of Pharmacy in the Maryland College of Pharmacy. Second edition, revised and enlarged. Price 19s. net.

NAUD, C., 3, Rue Racine, Paris.

Traité de Bactériologie Pure et Appliquée à la Médecine et à l'Hygiène. Par MM. P. Miquel et R. Cambier, Directeur et Sous-directeur du Laboratoire de la Ville de Paris. Price 45 francs.

Cliniques Médicales Iconographiques. Par MM. P. Haushalter, G. Etienne, L. Spillmann, Agrégés à la Faculté de Médecine de Nancy, and Ch. Thiry, Ancien Interne des Hôpitaux de Nancy. Price not stated.

NEW SYDENHAM SOCIETY, London.

Volume 174. The Clinical Pathology of the Blood. By Dr. Rud R. v. Limbeck of Vienna. Translated from the Second German Edition by Arthur Latham, M.A (Oxon, et Cantab.), M.R.C.P. Lond., and John Nachbar, M.A., M.D. Cantab. Price not stated.

PENTLAND, YOUNG J., Edinburgh and London.

Handbook of Obstetric Nursing. By Francis W. N. Haultain, M.D., F.R.C.P. Ed., and James Haig Ferguson, M.D., F.R.C.P. Ed., M.R.C.S. Eng. Fourth edition, revised and enlarged. Price not stated.

SPOTTISWOODE AND CO., Limited, 54, Gracechurch-street, E.C.

The Dentists' Register. Printed and published under the direction of the General Council of Medical Education and Registration of the United Kingdom. 1902. Price 3s. 4d.

# Appointments.

*Successful applicants for Vacancies, Secretaries of Public Institutions, and others possessing information suitable for this column, are invited to forward it to* THE LANCET *Office, directed to the Sub-Editor, not later than 9 o'clock on the Thursday morning of each week, for publication in the next number.*

ADAMS, HAROLD COTTERELL, L.R.C.P. Lond., M.R.C.S., has been appointed Medical Officer for the Paignton and Marldon Districts by the Totnes Board of Guardians, vice Dr. J. Hamilton Ward.

ALLAN, HECTOR, M.B., C.M. Aberd., has been appointed Medical Officer of Health to the Whalley Bridge Urban District Council.

BARNES, ARTHUR STANLEY, M.D., M.R.C.P. Lond., B.Sc., has been appointed Senior House Physician to the National Hospital for the Paralysed and Epileptic, vice Dr. Singer, resigned.

BEATTIE, R., M.D. R.U.I., has been re-appointed Medical Officer of Health to the Southill Upper Urban District Councils.

BEHRENDT, M. R. J., L.R.C.P., L.R.C.S. Edin., has been re-appointed Medical Officer of Health to the Scunthorpe and to the Brumby and Frodingham Urban District Councils.

BRETON, LANCELOT M., M.R.C.S., L.R.C.P. Lond., has been appointed Medical Officer and Public Vaccinator to No. 3 District of the South Stoneham Union.

BULLMORE, CHARLES CECIL, L.R.C.P., L.R.C.S. Edin., L.F.P.S. Glasg., has been appointed Medical Officer for the Falmouth and Truro Port Sanitary Authority, vice Dr. W. King Bullmore, resigned.

BUZZARD, E. FARQUHAR, M.A., M.B., M.R.C.P. Lond., has been appointed Assistant Physician to the Belgrave Hospital for Children.

FORBES, R., M.D. Glasg., has been re-appointed Medical Officer of Health to the Eastwood Urban District Council.

FORSYTH, R., M.D. Glasg., has been re-appointed Medical Officer of Health to the Drighlington Urban District Council.

HAMILTON, JOHN, M.D. Durh., F.R.C.S. Edin., has been re-appointed Medical Officer of Health to the Swadlincote Urban District Council.

JONES, HELENA G., M.B. Lond., has been appointed Assistant Medical Officer to the District Asylum, Mullingar.

PARSONS, FRANCIS JOHN CRANE, L.R.C.P. Lond., M.R.C.S., L.S.A., J.P., has been re-appointed Medical Officer of Health for the Bridgwater Urban District.

PHILLIPS, G. G., M.R.C.S., L.S.A., has been appointed Medical Officer of Health to the Tickhill Urban District Council.

PHILLIPS, HUBERT C., M.R.C.S. Eng., M. & L.S.A. Lond., has been appointed Anæsthetist to the Female Lock Hospital, Harrow-road, W.

SOLTAU, GRACE, L.R.C.P. & S. Edin., has been appointed House Surgeon to the Belgrave Hospital for Children.

STEWART, THOMAS GRAINGER, M.B., Ch.B. Edin., has been appointed Junior House Physician to the National Hospital for the Paralysed and Epileptic, vice Dr. Barnes.

TURNER, DAWSON, B.A., M.D. Edin., has been appointed Examiner in Experimental Physics to Edinburgh University.

VERNON, ETHEL M., M.D., B.S. Lond., L.S.A., has been appointed Pathologist to the New Hospital for Women, Euston-road.

WOLFE, JAMES FRANCIS, M.B., C.M. Edin., has been appointed Medical Officer to the Heavitree (Exeter) Isolation Hospital.

WOODER, RICHARD GEORGE, L.R.C.P. Lond., M.R.C.S., L.S.A., has been re-appointed Medical Officer and Public Vaccinator for the Kilmersdon District by the Frome (Somerset) Board of Guardians.

# Vacancies.

*For further information regarding each vacancy reference should be made to the advertisement (see Index).*

BEDFORD COUNTY HOSPITAL.—House Physician. Salary £60 per annum, with board, lodging, and washing. Also Senior House Surgeon. Salary £100 a year, with apartments, board, and washing.

BIRMINGHAM WORKHOUSE INFIRMARY.—Assistant Resident Medical Officer. Salary £100 per annum, with apartments, rations, &c.

BRENTFORD UNION INFIRMARY AND WORKHOUSE.—Assistant Medical Superintendent, unmarried. The person appointed will be required to devote his whole time to the service of the guardians. Salary £120 per annum, with apartments, rations, washing, &c.

BRIDGWATER INFIRMARY.—House Surgeon. Salary £80 a year, with board and residence.

CENTRAL LONDON OPHTHALMIC HOSPITAL, Gray's Inn-road, W.C.—Retraction Assistant. Salary at rate of £50 per annum.

CHELSEA HOSPITAL FOR WOMEN, Fulham-road, S.W.—Pathologist.

CITY OF LONDON UNION INFIRMARY.—Assistant Medical Superintendent, single, or widower without children. Salary £150 per annum, with apartments, rations, and washing.

DURHAM COUNTY HOSPITAL.—House Surgeon, also Assistant House Surgeon. Salary of Senior £100, Junior £65, with board and lodging in each case.

ESSEX AND COLCHESTER GENERAL HOSPITAL.—House Surgeon. Salary £100 a year, with board, washing, and residence.

GUY'S HOSPITAL.—Demonstrator of Bacteriology and Bacteriologist. Salary about £180, rising to £200 per annum.

HOSPITAL FOR CONSUMPTION AND DISEASES OF THE CHEST, Brompton.—Resident House Physicians for six months. Honorarium £25.

LEEDS GENERAL INFIRMARY.—Honorary Dental Surgeon.

LEICESTER INFIRMARY.—Assistant House Surgeon. Salary £80 per annum, with board, apartments, and washing.

LINCOLN HOSPITAL FOR THE INSANE, The Lawn.—Assistant Medical Officer. Salary £100 a year.

LIVERPOOL ROYAL SOUTHERN HOSPITAL.—Junior House Surgeon. Salary 60 guineas per annum.

NORFOLK AND NORWICH HOSPITAL.—House Surgeon, unmarried. Salary £80 per annum, with board, lodging, and washing.

NORTH-EASTERN HOSPITAL FOR CHILDREN, Hackney-road, N.E.—House Physician for six months. Salary at rate of £80 per annum, with board, residence, and laundry.

NORTHUMBERLAND HOUSE, Finsbury-park, N.—Assistant Medical Officer. Salary £120 per annum, with board, &c.

NOTTINGHAM GENERAL DISPENSARY.—Assistant Resident Surgeon, unmarried. Salary £160 per annum, increasing by £10 every year, with apartments, attendance, light, and fuel.

OLDHAM INFIRMARY.—Senior House Surgeon. Salary £100 per annum, with board, residence, and washing.

PADDINGTON INFIRMARY.—Clinical Assistant and Second Assistant to the Medical Superintendent, unmarried, for six months. Honorarium £36, with board, lodging, and washing.

PARISH OF ST. PANCRAS, London.—Senior Assistant Medical Officer (Resident). Salary £135 per annum, with allowances.

ROYAL SOUTH HANTS AND SOUTHAMPTON HOSPITAL.—Assistant Physician.

ROYAL UNIVERSITY OF IRELAND.—Examiners in Surgery, salary £50; Midwifery, salary £35; Pathology, salary £25; and Ophthalmology, salary £20; in each case with travelling allowances.

ST. PANCRAS AND NORTHERN DISPENSARY, 126, Euston-road.—Honorary Surgeon.

SHEFFIELD UNIVERSITY COLLEGE.—Demonstrator in Bacteriological Laboratory. Salary £150, rising to £200 per annum.

SOUTH LAMBETH, STOCKWELL, AND NORTH BRIXTON DISPENSARY, Albert-square, Clapham-road.—Vacancy in Visiting Medical Staff.

TOTTENHAM HOSPITAL.—House Surgeon. Salary £50 per annum, with board, residence, and laundry.

TUNBRIDGE WELLS GENERAL HOSPITAL.—House Surgeon, unmarried. Salary £100 per annum, with board, apartments, gas, firing, and attendance.

VICTORIA HOSPITAL, Folkestone.—House Surgeon. Salary £100 per annum, with board, residence, and laundry.

# Births, Marriages, and Deaths.

## BIRTHS.

CHAMBERS.—On March 19th, at The Priory, Roehampton, the wife of James Chambers, M.D. R.U.I., of a son.

EVANS.—On March 23rd, at Upper Wimpole-street, the wife of Willmott Evans, M.D., F.R.C.S., of a son.

FAWSSETT.—On March 16th, at Stratford-road, Sparkbrook, Birmingham, Ethel, wife of Basil Fawssett, M.R.C.S., L.R.C.P. Lond., of a son.

HUNNARD.—On March 19th, at Mansfield, Notts, the wife of Arthur Hunnard, M.B., B.S. Lond., prematurely, of a daughter.

PEARSON.—On March 18th, at Allicedale, South Africa, the wife of Maurice Grey Pearson, M.B. Lond., of a son.

## DEATHS.

CADDY.—John Turner Caddy, M.D., died on March 21st at Charterhouse, Lion Gate-gardens, Richmond, Surrey, aged 80.

PHILLIPS.—On March 19th, at Porchester-square, Francis Addison Phillips, M.R.C.S., L.R.C.P. Lond., aged 30.

***N.B.—A fee of 5s. is charged for the insertion of Notices of Births, Marriages, and Deaths.***

# Notes, Short Comments, and Answers to Correspondents.

## SCOTTISH POOR-LAW MEDICAL OFFICERS.

IF our readers will turn to THE LANCET of March 8th, 1902, page 685, they will find an annotation under the above heading giving particulars of the differences between Dr. G. Nicoll, the medical officer of the parish of Clyne, Sutherland, and some of the ratepayers. Since then another meeting of ratepayers has been held at Brora on Feb. 28th in consequence of the Parish Council of Clyne not having acted upon the resolution of the ratepayers' meeting held on Feb. 11th demanding the dismissal of Dr. Nicoll. Mr. Andrew Ross, a ratepayer and a member of the county council, was elected chairman. The reply from the clerk of the parish council addressed to this gentleman and dated Feb. 13th was read. It acknowledged the resolution passed on Feb. 11th and stated that he had written to the chairman of the parish council (Mr. Sharp) for instructions. The chairman of the meeting said that he had heard nothing from that gentleman and thus they had met again. Four motions were then put to the meeting and carried *nem. con.* The first resolution was to the effect that the ratepayers' meeting was dissatisfied with the parish council in its still retaining the services of Dr. Nicoll, and dissatisfied with the chairman, Mr. Spark, for his lack of immediate action. The second resolution appointed a deputation of 12 ratepayers to wait upon the chairman of the council to learn his proposed action and requesting him to call an early special meeting of the council. The third resolution determined that should the parish council not take immediate action the matter be brought before the Local Government Board and the Medical Board. The fourth embodied the finding of the meeting that the officer should be dismissed instantly with payment of three months' salary in advance. Several councillors spoke at the meeting and it appeared that six months ago a motion was brought forward in the council to dismiss Dr. Nicoll; that five voted for it and five against; and that the chairman gave his casting vote in favour of keeping him. It is hardly necessary to add that the most prominent speakers at the ratepayers' meeting were some of the five who voted against the motion in council. This seems to have been the *primum mobile* of the matter. The chairman stated that the result of the deputation would be communicated to the ratepayers at a subsequent meeting. A deputation was then appointed which met the chairman of the parish council on March 3rd. He is reported to have replied that as the letter accompanying the resolutions was addressed to the council as a body he declined to take any action.

An interesting correspondance has been running in the pages of the *Northern Times* on this subject. One of the malcontents states that the parochial board of 12 years ago took steps to have a medical officer for its own parish and paid him £47 beyond the regular salary for attending paupers so that it could have a medical man nearer and at a cheaper rate to attend the other parishioners. "Lex Terræ," in reply, says he does not believe that the statement is correct; he states that such an arrangement is illegal and refers to the thirty-first annual report (1876) of the Board of Supervision whose decision in a similar case was that it was illegal to expend the funds raised for the relief of the poor in order to provide cheaper or more convenient medical attendance for persons who are not paupers. He refers also to the second annual report of the Local Government Board (1896), where it is pointed out that the inhabitants of a parish might make such arrangements as they saw fit to induce a medical man to settle in the parish, but these conditions could not enter into the contract between the parish council and its medical officer.

It seems to us that after being so narrowly defeated at the council meeting the minority have raised an agitation amongst the ratepayers starting with the assumption that their medical man is a sort of club doctor to the parish whom they have forced to accept a composition of a part of his proper fees, and in consequence that he is, like the parochial fireman, always at the beck and call, *nolens volens*, of any parishioner, especially an obtrusive ratepayer.

## GREEK FOUNDLING CHILDREN IN CONSTANTINOPLE.

IN THE LANCET of April 6th, 1901, p. 1020, we reviewed a work by Dr. Spiridion C. Zavitziano of Constantinople, in which that gentleman gave a very favourable account of the methods adopted by the Greek community in Pera for the rescue of foundlings, a system which has been in operation for about 12 years. Two or three months ago the Œcumenical Patriarch appointed a commission to consider whether the same system of caring for foundlings could be extended to the other suburbs of the Turkish capital, and this commission recommended the establishment of a maternity hospital with a view to the discouragement of abortion and infanticide. A serious difficulty has, however, now arisen because since the report of the commission has been printed the Turkish Government has issued an order to the police by which all the foundlings of Constantinople, whether they are of the Christian religion or not, must be sent to the poor asylum where, up to this date, the results have not been at all encouraging. For instance, out of 112 children admitted there only eight are now alive, whereas among the foundlings of Pera taken care of by the Greek community the death-rate is only 4 per cent. or less. Among about 80 of these last-mentioned children only two died during the month of January and none during the month of February. Under these circumstances it seems to be hardly possible to justify the new regulation made by the Turkish Government.

## FLUORIDES IN MEDICINE.

*To the Editors of* THE LANCET.

SIRS,—I shall be very much obliged if any of your readers can give me any information in connexion with the medicinal or other use of hydrofluoric acid and its compounds, and as to any injurious effects which may have resulted from their administration. I find that there is an increasing tendency to use them as food preservatives. I have noted references with regard to their use in Martindale and Westcott's Extra Pharmacopœia, ninth edition.

I am, Sirs, yours faithfully,

March 18th, 1902. A. E. P.

## MR. RAWKINS REDIVIVUS.

AT the Plymouth County Court on March 12th Mr. William O. T. Annesley, L.S.A. Lond., brought an action against Mr. H. C. Lambart, L.R.C.P., L.R.C.S. Edin., for £5, balance of fees for acting as locum-tenent in April, May, and June, 1900, during which time plaintiff took charge of defendant's surgery at a salary of £2 2*s.* a week. Letters were read in court from defendant stating, "The surgery to pay expenses must make at least £4 per week, so charge them more and put in second bottles and plasters, ointments and lotions whenever you get the chance." "I saw you had given a six-ounce bottle to a child five years old, and the dose marked on it was one teaspoonful three times a day. Now you will see we shall never make a fortune at that rate. ..... Kindly remedy this. Give to a child of that age a one and a-half ounce bottle, charge 1*s.*, and order a teaspoonful every two or three hours, so that they may come back next day." The defence was that plaintiff did not perform his duties satisfactorily. His Honour Judge Lush Wilson, K.C., gave judgment for plaintiff for £2 18*s.* 11*d.* and costs.

Does anyone, we wonder, ever read nowadays a novel by Albert Smith called "The Adventures of Mr. Ledbury"? If so, he will remember the scene when Johnson announced that Mrs. Stokes wanted four more draughts and would call for them by-and-by.

> "Very good!" replied Mr. Rawkins. "Suppose you make it six. The bread bill will be heavy this week, and I shall want some ground bait on Friday. The extra three shillings will cover it."
>
> "Bob," shouted Mr. Prodgers ..... "Where are the clean phials?"
>
> "There ain't none," answered Bob. "I hadn't time to shot 'em."
>
> "We can send a mixture instead," said Johnson. "I can wash out this Reading-Sauce bottle in a minute."
>
> "No, no, by no means," returned Rawkins, "don't put her up to it. The minute people find that a three-shilling mixture holds more than four eighteen-penny phials, they put the skid on the draughts; wait for the little bottles."

So does history repeat itself, but it is the kind of history which needs no repetition. Mr. Lambart's situation was made to wear as undignified an appearance as possible, but he has his own letters to thank for this. It is an unfortunate fact that the medical man can always obtain thanks and sometimes payment for medicine, while his undiluted advice is very generally rewarded by neither. This attitude of the public, which is tantamount to a demand for a constant supply of drugs, compels medical men occasionally to order medicine so as to ensure their instructions being followed. It may also be here and there responsible for a revival of the policy of Mr. Rawkins, but we repudiate utterly any suggestion that such unworthy tactics are often resorted to by members of our great and philanthropic profession.

## STERILISED DRESSINGS IN PACKETS.

Messrs. Maw, Son, and Thompson have sent us a specimen packet of sterilised dressings. The specimen submitted to us contains Lister's cyanide wool. It is carefully packed in three papers, the outer being merely a covering layer. Within this is a layer of parchment paper carefully sealed with paraffin wax, and within this again another layer of thin paper. It is stated that the wool and the two inner coverings are carefully sterilised before putting up, and it is evident that the strict observance of all precautions will enable the surgeon to carry with him enough dressing for one case or so in a handy form.

## RARE MEDICAL LITERATURE.

Two rare old quasi-medical works were included in the sale of Lord Mexborough's library at Sotheby's auction-rooms, Wellington-street, W.C., recently. The first consisted of eight leaves, printed in a bold Gothic letter, 24 letters to a full page, and believed to have been issued by W. de Machlinia, of London, in the year 1483. The title runs, "Here begynneth a litill boke necessarye and behoveful ayenst the Pestilence," and the introduction states, "I the Bisshop (Ramicus) of Arusiens in the royame of Denmarke, doctour of Phisike, will write by the moost experte and famous doctours

auctorised in Phisike soume thinges of the infirmyte of pestilence which dayly enfecteth and sone suffreth us to departe oute of this lyfe." This was sold for £160, the purchaser being Mr. Quaritch. The other work referred to was of the date 1652, the author being George Fidge, and the title "The Great Eater of Grayes-Inne, or the Life of Mr. Marriot the Cormorant, Wherein is set forth all the Exploits and Actions by him performed; with many pleasant Stories of his Travells into Kent and other places. Also a rare Physicall Dispensatory, being the manner how he makes his Cordiall Broaths, Pills, Purgations, Julips, and Vomits to keep his Body in temper and free from Surfeits." This realised £11 5s.

### A QUESTION OF FEES.

*To the Editors of* THE LANCET.

SIRS,—When attending a club patient with a dangerous aneurysm I at his request called in and conferred with my medical neighbours. Since the decease of the patient I find that the widow expects the club to pay the consultation fees, also my fee for meeting them in consultation. I have always made a rule of charging club patients a fee when I meet any medical man in consultation, and I think I am within my rights in so doing. Will you kindly express your view on the matter

I am, Sirs, yours faithfully,

March 25th, 1902. CONSTANT READER.

*** We think that such extra services rendered by the club medical officer as attending at a consultation should be paid by the patient or his representatives and not by the club. The patient or his representatives should also pay the consultation fees of the medical gentlemen called in to consider the case with the club medical officer.—ED. L.

### WANTED—A HOME.

*To the Editors of* THE LANCET.

SIRS,—Can any reader kindly recommend a comfortable home, in London or suburbs, where a lady, aged 76 years, would be well cared for? She is bedridden from right hemiplegia with contractures (no aphasia), and cannot pay more than £2 a week.

I am, Sirs, yours faithfully,

Teignmouth, Devon. F. CECIL H. PIGGOTT, M.D. Cantab.

### A WARNING.

*To the Editors of* THE LANCET.

SIRS,—A canvasser for a trade directory is calling at the houses of medical men at an hour when they are probably out and interviews their wives or housekeepers. He represents that the name of the medical man was in the last edition of his trade directory and asks sometimes 2*s.*, sometimes 5*s.*, for a re-insertion. His manner is plausible and he generally gets the money.—I am, Sirs, yours faithfully,

Romford-road, Forest Gate, March 21st, 1902. STEPHEN SMITH.

### COUNTRY HOUSE SEWAGE DISPOSAL.

*To the Editors of* THE LANCET.

SIRS,—I should be obliged if any of your readers would tell me the best way of dealing with the sewage of a country house having about one acre of ground. At present the sewage is conveyed into an underground covered tank made of unmortared walls, so that the liquid drains into the surrounding gravelly soil, the surface being thickly planted with trees. In wet weather the overflow comes to the surface and is at times offensive. The present system has been in operation for 12 years without causing any trouble, but now the soil is becoming "sick" and is a nuisance. The house is built on the slope and the soil is stony and porous. I am, Sirs, yours faithfully,

March 22nd, 1902. M.D.

### A CAUTION WITH RESPECT TO SAMPLES.

*To the Editors of* THE LANCET.

SIRS,—A tin box containing Bipalatinoids No. 581, forwarded by Messrs. Oppenheimer, Son, and Co., Limited, was incautiously opened and one of the bipalatinoids fell on the floor. My favourite cat played with it and ate it. In about half an hour after it was reported in a fit and when I saw it it was dead. It had micturated and its limbs were contracted. I referred to the prescription on the box and found inscribed—Ferrous carbonate (pil. Blaud), aloin, strychnia, ac arseniosi, āā gr. $\frac{1}{3}$, pulv. capsici, gr. $\frac{1}{4}$. Dose, one after meals. Strychnia gr. $\frac{1}{30}$ was the amount taken by the cat which caused its death by poisoning. If animals are about one should not be satisfied until such samples are burnt in the fire, as no other disposal is safe. I hope this may be a warning to others. I am, Sirs, yours faithfully,

F. A. PURCELL, M.D. R.U.I.

Manchester-square, W., March 24th, 1902.

### HOW DISEASE IS SPREAD.

Two persons were fined 40*s.* each at the Glasgow Sheriff Court on March 20th for concealing cases of small-pox which had occurred in their respective houses. In the first case the defendant pleaded that the patient refused to see a medical man because he feared being sent to a hospital. The case was not discovered until after the patient's death. In the second case an Irishman was the accused. The first intimation which the sanitary authorities received was through the police who had been informed by neighbours. When the medical officer called and asked to see the patient who was said to be suffering from small-pox he was shown an elder sister and was told that she was the only girl in the house. On going into the kitchen, however, he found a young girl lying in bed, hidden by bedclothes, who was suffering from small-pox. The school board officer had been told that the girl was staying with some friends in Ireland. The elder sister was the only member of the household who had been revaccinated and she was nursing the patient notwithstanding the fact that she was employed at home by a firm of dressmakers in the city. In reporting these cases the *Belfast Whig* states that the sheriff regretted exceedingly that legislation only provided a fine of 40*s.* for so gross a crime against the public interest. In the second case no comment seems to have been made and no doubt the sheriff felt the impossibility of doing so in temperate language. In both instances the house was occupied by several people. We share the sheriff's regret that the fine which the Legislature has thought sufficient in these cases is so ridiculously inadequate and we have called attention to the matter on several occasions, but until the law is altered and the penalty is made greater the public will still be exposed to the danger of infection through the criminal action of selfish or ignorant people.

THE writer of an account of a Case of Eclampsia, the manuscript of which bears no title or author's name, is requested to communicate with us.

THE writer of a letter signed "G.P." and dated Feb. 17th is also requested to communicate with us.

*Neuris.*—Our correspondent is recommended to apply to Professor Adamkiewicz himself. His address is IV Wiedner Hauptstrasse 20, Vienna, Austria.

*J. B.* should consult his medical man. We do not give medical advice.

# Medical Diary for the ensuing Week.

## OPERATIONS.

### METROPOLITAN HOSPITALS.

**MONDAY (31st).**—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), St. George's (2 P.M.), St. Mary's (2.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), Chelsea (2 P.M.), Samaritan (Gynæcological, by Physicians, 2 P.M.), Soho-square (2 P.M.), Royal Orthopædic (2 P.M.), City Orthopædic (4 P.M.), Gt. Northern Central (2.30 P.M.) West London (2.30 P.M.), London Throat (2 P.M.).

**TUESDAY (1st).**—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), Guy's (1.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), West London (2.30 P.M.), University College (2 P.M.), St. George's (1 P.M.), St. Mary's (1 P.M.), St. Mark's (2.30 P.M.), Cancer (2 P.M.), Metropolitan (2.30 P.M.), London Throat (2 P.M. and 6 P.M.), Royal Ear (3 P.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat, Golden-square (9.30 A.M.).

**WEDNESDAY (2nd).**—St. Bartholomew's (1.30 P.M.), University College (2 P.M.), Royal Free (2 P.M.), Middlesex (1.30 P.M.), Charing-cross (3 P.M.), St. Thomas's (2 P.M.), London (2 P.M.), King's College (2 P.M.), St. George's (Ophthalmic, 1 P.M.), St. Mary's (2 P.M.), National Orthopædic (10 A.M.), St. Peter's (2 P.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Gt. Ormond-street (9.30 A.M.), Gt. Northern Central (2.30 P.M.), Westminster (2 P.M.), Metropolitan (2.30 P.M.), London Throat (2 P.M.), Cancer (2 P.M.), Throat, Golden-square (9.30 A.M.).

**THURSDAY (3rd).**—St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), University College (2 P.M.), Charing-cross (3 P.M.), St. George's (1 P.M.), London (2 P.M.), King's College (2 P.M.), Middlesex (1.30 P.M.), St. Mary's (2.30 P.M.), Soho-square (2 P.M.), North-West London (2 P.M.), Chelsea (2 P.M.), Gt. Northern Central (Gynæcological, 2.30 P.M.), Metropolitan (2.30 P.M.), London Throat (2 P.M.), St. Mark's (2 P.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat, Golden-square (9.30 A.M.).

**FRIDAY (4th).**—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), Guy's (1.30 P.M.), Middlesex (1.30 P.M.), Charing-cross (3 P.M.), St. George's (1 P.M.), King's College (2 P.M.), St. Mary's (2 P.M.), Ophthalmic (10 A.M.), Cancer (2 P.M.), Chelsea (2 P.M.), Gt. Northern Central (2.30 P.M.). West London (2.30 P.M.), London Throat (2 P.M. and 6 P.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat, Golden-square, (9.30 A.M.), City Orthopædic (2.30 P.M.).

**SATURDAY (5th).**—Royal Free (9 A.M. and 2 P.M.), London (2 P.M.) Middlesex (1.30 P.M.), St. Thomas's (2 P.M.), University College (9.15 A.M.), Charing-cross (2 P.M.), St. George's (1 P.M.), St. Mary's (10 P.M.), London Throat (2 P.M.), Throat, Golden-square (9.30 A.M.).

**At the Royal Eye Hospital (2 P.M.), the Royal London Ophthalmic (10 A.M.), the Royal Westminster Ophthalmic (1.30 P.M.), and the Central London Ophthalmic Hospitals operations are performed daily.**

## SOCIETIES.

**WEDNESDAY (2nd).**—OBSTETRICAL SOCIETY OF LONDON (20, Hanover-square, W.).—8 P.M. Specimens will be shown by Dr. Fairbairn, Dr. Williamson, Dr. Berkeley, Dr. M. Kerr, and Dr. A. Routh. Paper:—Dr. Lewers: A Case of Primary Tuberculosis of the Cervix simulating Cancer and treated by Vaginal Hysterectomy.

**THURSDAY (3rd).**—RÖNTGEN SOCIETY (20, Hanover-square, W.).—8.30 P.M. Paper forwarded by Dr. Ch. Leonard (Philadelphia): X-ray Diagnosis of Renal Calculus.

HARVEIAN SOCIETY OF LONDON (Stafford Rooms, Titchborne-street, Edgware-road, W.).—8.30 P.M. Paper:—Dr. R. Bowles: The Practical Treatment of Functional Vasomotor Disturbances.—Mr. R. Johnson: Some Points in the Treatment of Tuberculous Disease of the Knee.

**FRIDAY (4th).**—WEST KENT MEDICO-CHIRURGICAL SOCIETY (Royal Kent Dispensary, Greenwich-road, S.E.).—8.45 P.M. Discussion on Anæsthetics (introduced by Dr. B. Gardiner).

BRITISH ELECTRO-THERAPEUTIC SOCIETY (11, Chandos-street, Cavendish-square, W.).—8.30 P.M. Papers:—Dr. H. Walsham: The Diagnosis of Thoracic Aneurysm by the X-rays (illustrated by the lantern).—Dr. Sequeira: The Finsen Treatment of Lupus, Rodent Ulcer, &c. (illustrative cases will be in attendance at 8.15 P.M.).

WEST LONDON MEDICO-CHIRURGICAL SOCIETY (Society's Rooms).—8.30 P.M. Papers:—Dr. J. Allan: The Treatment of Malignant Disease by Electrical Currents of High Potential Frequency (with notes of cases).—Dr. A. Whitfield: A Case of Peculiar Intolerance of the External Application of Mercury.—Dr. J. D. Mortimer: Remarks on 1000 Anæsthetisations.

## LECTURES, ADDRESSES, DEMONSTRATIONS, &c.

**THURSDAY (3rd).**—MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chenies-street, W.C.).—4 P.M. Mr. Hutchinson: Clinique. (Surgical.)

**FRIDAY (4th).**—MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chenies-street, W.C.).—4 P.M. Dr. H. Tilley: Clinique. (Throat.)

# EDITORIAL NOTICES.

IT is most important that communications relating to the Editorial business of THE LANCET should be addressed *exclusively* "TO THE EDITORS," and not in any case to any gentleman who may be supposed to be connected with the Editorial staff. It is urgently necessary that attention be given to this notice.

*It is especially requested that early intelligence of local events having a medical interest, or which it is desirable to bring under the notice of the profession, may be sent direct to this Office.*

*Lectures, original articles, and reports should be written on one side of the paper only*, AND WHEN ACCOMPANIED BY BLOCKS IT IS REQUESTED THAT THE NAME OF THE AUTHOR, AND IF POSSIBLE OF THE ARTICLE, SHOULD BE WRITTEN ON THE BLOCKS TO FACILITATE IDENTIFICATION.

*Letters, whether intended for insertion or for private information, must be authenticated by the names and addresses of their writers—not necessarily for publication.*

*We cannot prescribe or recommend practitioners.*

*Local papers containing reports or news paragraphs should be marked and addressed "To the Sub-Editor."*

*Letters relating to the publication, sale, and advertising departments of* THE LANCET *should be addressed "To the Manager."*

*We cannot undertake to return MSS. not used.*

# MANAGER'S NOTICES.

### THE INDEX TO THE LANCET.

THE Index to Vol. II. of 1901, which was completed with the issue of Dec. 28th, and the Title-page to the Volume, were given in THE LANCET of Jan 4th.

### VOLUMES AND CASES.

VOLUMES for the second half of the year 1901 are now ready. Bound in cloth, gilt lettered, price 18*s.*, carriage extra.

Cases for binding the half-year's numbers are also ready. Cloth, gilt lettered, price 2*s.*, by post 2*s.* 3*d.*

To be obtained on application to the Manager, accompanied by remittance.

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WILL Subscribers please note that only those subscriptions which are sent direct to the Proprietors of THE LANCET at their Offices, 423, Strand, W.C., are dealt with by them? Subscriptions paid to London or to local newsagents (with none of whom have the Proprietors any connexion whatever) do not reach THE LANCET Offices, and consequently inquiries concerning missing copies, &c., should be sent to the Agent to whom the subscription is paid and *not* to THE LANCET Offices.

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SUBSCRIBERS ABROAD ARE PARTICULARLY REQUESTED TO NOTE THE RATES OF SUBSCRIPTIONS GIVEN ABOVE. It has come to the knowledge of the Manager that in some cases higher rates are being charged, on the plea that the heavy weight of THE LANCET necessitates additional postage above the ordinary rate allowed for in the terms of subscriptions. Any demand for increased rates, on this or on any other ground, should be resisted. The Proprietors of THE LANCET have for many years paid, and continue to pay, the whole of the heavy cost of postage on overweight foreign issues; and Agents are authorised to collect, and do so collect, from the Proprietors the cost of such extra postage.

The Manager will be pleased to forward copies direct from the Offices to places abroad at the above rates, whatever be the weight of any of the copies so supplied. Address—THE MANAGER, THE LANCET OFFICES, 423, STRAND, LONDON, ENGLAND.

## METEOROLOGICAL READINGS.

*(Taken daily at 8.30 a.m. by Steward's Instruments.)*

THE LANCET Office, March 26th, 1902.

| Date. | Barometer reduced to Sea Level and 32° F. | Direction of Wind. | Rainfall. | Solar Radiation in Vacuo. | Maximum Temp. Shade. | Min Temp. | Wet Bulb. | Dry Bulb. | Remarks at 8.30 A.M. |
|---|---|---|---|---|---|---|---|---|---|
| Mar. 20 | 29·39 | S.W. | ... | 65 | 49 | 43 | 46 | 48 | Stormy |
| ,, 21 | 29·26 | S.W. | 0·27 | 93 | 52 | 39 | 40 | 42 | Fine |
| ,, 22 | 29·24 | S.W. | 0·10 | 77 | 48 | 39 | 41 | 45 | Cloudy |
| ,, 23 | 29·35 | S.W. | 0·10 | 85 | 48 | 38 | 39 | 39 | Cloudy |
| ,, 24 | 29·57 | S.W. | 0·05 | 81 | 48 | 36 | 37 | 39 | Cloudy |
| ,, 25 | 29·42 | WNW | 0·13 | 84 | 51 | 38 | 40 | 43 | Cloudy |
| ,, 26 | 29·94 | N.W. | ... | 82 | 51 | 35 | 38 | 40 | Cloudy |

**During the week marked copies of the following newspapers have been received:**—*Eastern Evening News, Army and Navy Gazette, Clinical Journal, Nursing Record, Sanitary Record, The Rock, Nordiskt Medicinskt Arkiv, Wolverhampton and Coventry News, Middlesboro' Daily Gazette, Warwick and Warwickshire Advertiser, Wynberg Times, Reading Mercury and Oxford Gazette, Western Morning News, Echo, Glasgow Evening News, Surrey Herald, Manchester Guardian, Morning Leader, Star, South Wales Daily News, Standard, Freeman's Journal, Birmingham Post, South Wales Echo, Birmingham Mail, Hartlepool Mail, City Press, Tunbridge Wells Advertiser, &c.*

## Communications, Letters, &c., have been received from—

**A.**—Monsieur J. Astier, Asnières; Dr. E. Antrobus, Great Malvern; Messrs. Allen and Hanburys, Lond.

**B.**—Dr. E. F. Buzzard, Lond.; Messrs. Burgoyne, Burbidges, and Co., Lond.; Major E. H. Brown, I.M.S., Calcutta; Bedford County Hospital, Secretary of; T. B. Browne, Ltd., Lond.; Mr. J. P. Brooks, Wolverhampton; Mrs. Brown, Coniscliffe; Mr. T. B. Browne, Manchester; Messrs. F. B. Benger and Co., Manchester; Dr. Byrom Bramwell, Edinburgh; Mr. W. J. Beveridge, Caylloma, Peru; Messrs. C. Barker and Sons, Lond.; *Birmingham Gazette*.

**C.**—Dr. J. H. Crawford, Bradford; Messrs. Cosenza and Co., Lond.; Messrs. T. Christy and Co., Lond.; Cortland Wagon Co. Lond.; Mr. T. Carwardine, Bristol; Messrs. S. Clark and Co., Lond.; Dr. E. P. Cathcart, Munich; Messrs. W. P. and W. Cox, Leicester; Dr. Edgar du Cane, Swindon.

**D.**—Captain W. Dixon, Lond.; Davis's Feather Mills, Lond.; Messrs. Davis and Ornstien, Lond.; Denver Chemical Manufacturing Co., New York; Mr. Surendranath Deva, Allahabad, India.

**E.**—Mr. T. Crisp English, Lond.; Essex and Colchester General Hospital, Secretary of; E. H. W.; Mr. G. W. Ellis, Bishop Auckland.

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